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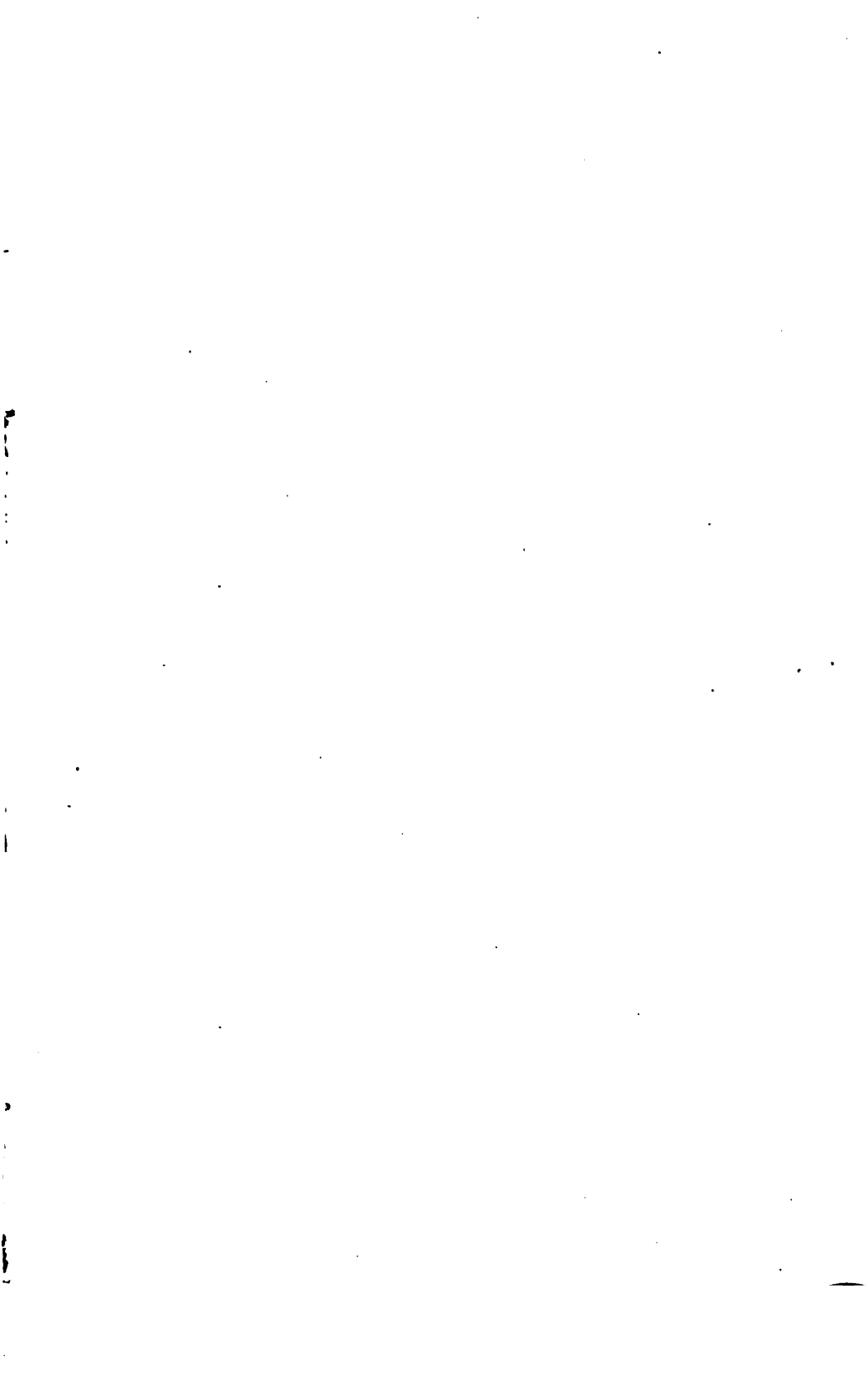
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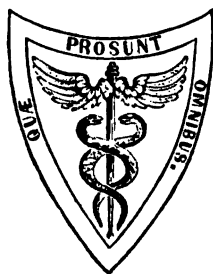
A DIGEST

OF THE

PROGRESS OF MEDICINE AND THE COLLATERAL
SCIENCES.

VOLUME VI.

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JANUARY, 1879.

Anatomy and Physiology.

Case of Conjoined Twins.

In the *Lyon Médical*, Drs. COLRAT and REBATEL describe a monstrosity aged thirteen months. The monstrosity has two heads, four arms, two thoraces, one abdomen, one penis, two testicles, one anus, and two legs. Baptiste and Jacques Tocci were born on October 4, 1877, at Loccana. Their father is thirty-two years old, their mother is only twenty years old, and well developed. She was never pregnant before. As regards heredity, the maternal grandmother bore twins; beyond this there is nothing extraordinary. Neither child has any teeth at present. The skeletons are normal up to the point of union at the base of the chest. The vertebral columns are distinct throughout, each terminating in a sacrum and coccyx. The ribs appear to be complete, and act independently of each other. The children are well developed, lively, and play with full animal spirits. In suckling, their mother gives her two breasts at once. Although there is only one abdomen, it is almost certain that there are two sets of intestines. Defecation is independent for each child. If one be asleep and the other awake, the waking one can only move the leg on his side. One is sick and vomits, while the other is calm. It belongs to St. Hiliare's class Sysomian.—*London Medical Record*, Nov. 15, 1878.

The Absorption of Albumen.

A. SCHMIDT-MULHEIM asks the question, whether digested albumen necessarily passes through the thoracic duct to enter the blood? To answer it he applied ligatures to the right and left thoracic ducts, and found the animals, if well fed, preserved all the appearance of sound health, and he noticed in particular that in dogs there was no diminution in the elimination of nitrogen. He describes in detail the changes in the lymphatic system resulting from the application of the ligature, the dilatation of the lymph and chyle vessels, the infiltration of the perivascular connective tissue, the extravasations of chyle in the cavities of the abdomen and thorax, and the enlargement of the mesenteric glands. With oleaginous chyle, he found that in almost every instance there were extensive infiltrations and extravasations, of a milky fluid, though there did not appear to be, as he convinced himself by mingling colouring matters with the chyle, any rupture of bloodvessels. In opposition to Sir Astley Cooper, who noticed rupture of the thoracic duct, and the escape of its entire contents, so that it was always empty and collapsed after ligature, Schmidt-Mulheim found it invariably tightly distended, and never injured. The general result of his experiments was to show clearly that after complete obstruction of the chyle, and prevention of its entrance into the blood-circulation, the digestion, absorption, and metabolism of the albuminous compounds proceeded as usual.—*Lancet*, Nov. 16, 1878.

The Absorption of Sugar.

The path by which sugar is absorbed has been investigated by v. MERING. No narcotics were used, since they all, including curara, have a tendency to induce the appearance of sugar in the urine. Mering made some preliminary experiments in which he was able to substantiate neither Dr. Pavy's statement, that muscular exertion and dyspnoea increased the quantity of sugar in the blood, nor the statement of Bernard, that sugar quickly disappeared from the blood. On the other hand, he corroborates Bernard's remark, that the blood contains more sugar after repeated venesection. The sugar appears to be chiefly contained in the serum, the blood-corpuscles containing very little. The serum of blood taken from the carotid contained in eight examinations 0.115 to 0.235 per cent. Dogs were fed, after long fasting, on starch, and, after from two to six hours, killed, the stomach and small intestines ligatured and removed, and washed out with alcohol. The stomach contained unchanged starch, amidulin or soluble starch, dextrin, and erythro-dextrin. The small intestine contained sugar, and starch, but no dextrin, and small quantities of lactic acid. Examination of the amount of sugar in the chyle of flesh-fed, as compared with sugar-and-starch-fed, dogs showed no remarkable difference, so that there is no reason for thinking that sugar is taken up by the absorbents and transmitted through the thoracic duct. The examination of the venous blood led clearly to the result that the absorption of sugar is chiefly effected by the veins, the serum of the carotid and portal blood always containing a larger amount of sugar than normal.—*Lancet*, Nov. 23, 1878.

On the Behaviour of Glycogen after its Injection into the Circulation.

R. BÜHM and F. A. HOFFMANN (*Archiv. für Exper. Pathol.*, etc., Band vii. p. 489) show that blood-stained urine was voided by a cat after from 3 to 10 grammes of glycogen had been injected in the course of a few hours into the jugular vein. Glycogen is consequently one of the substances which cause a breaking up of the blood-corpuscles. The plane of polarization is rotated to the right by the urine, from which the albumen has been removed; it also reduces cupric oxide, though the reduction is five to ten times smaller than is indicated by the rotation. The substance causing the rotation can be isolated, by precipitation with a large excess (6 to 8 volumes) of alcohol, at 95 per cent. The precipitate dissolves in water without opalescence, is not coloured by iodine, and does not answer to Fehling's test; but it is entirely converted into grape-sugar by prolonged boiling with acids. The authors assume 194.5° as the average amount of rotation of the plane of polarization; whilst for an average of seven experiments with glycogen, the value was somewhat greater, 226.7° . The substance, therefore, which appears in the urine after the injection of glycogen, is achroo-dextrin, not unchanged glycogen.—*Lond. Med. Record*, Oct. 15, 1878.

Materia Medica and Therapeutics.

The Therapeutic Value of Iodoform.

For many years the application of iodoform or teriodide of formyl has procured in the hands of Dr. J. MOLESCHOTT, of Turin (*Giornale della Reale Accademia di Torino*), effects so beneficial, that only the desire of studying physiologically

the action of this valuable substance has been capable of restraining him from publishing his clinical experience.

It was in 1870, he says, that I was first induced to try iodoform in the case of a scrofulous man, aged about 30. In 1867, I had him several times under treatment for cold abscesses in the right groin and in the back part of the hip of the same side. In September of that year he suffered from swelling of the cervical glands on both sides, those on the left forming a uniform mass larger than a large fist. I treated the patient assiduously from September, 1870, to November, 1870. Externally, I applied iodide and bromide of potassium, iodated iodide, iodide and biniodide of mercury, chloride of ammonium, belladonna, cicuta, and digitalis; internally, I gave iodide and bromide of potassium, iodized cod-liver oil, mineral waters rich in iodine (Sales water), without neglecting sea-baths. The success was very imperfect. It did not carry out the popular belief, often shared by medical men, that such tumours ought always to yield readily to the application of a simple iodine ointment. The case here referred to was one of the many obstinate ones. The advantages gained after a course of treatment diligently carried out for three years, still left much to be desired. The young man was desirous of being married; but his friends always ridiculed the proposal on account of the deformity caused by the tumour. Stimulated by the desire to free him from this, I searched through journals and books, and met with praises of iodoform; but I regret that I do not remember which author first led me to entertain hope. I prescribed one part of iodoform and fifteen of elastic collodion, to be applied by a brush night and morning. This treatment was commenced on November 20, 1870; and on December 18th the tumour was reduced to one-half of its size; on February 2, 1871, it had almost disappeared; and when I saw him on April 5th, no trace of it could be seen. The patient was then suffering from vesical catarrh, gingivitis, and a little palpitation; and in the next September he had perityphlitis. In March, 1871, when the tumour had nearly disappeared, the urine contained albumen for a short time. When he last came to consult me, in October, 1877, there had been no return of the glandular swellings, or of the cold abscess. This case did not remain singular in the circle of my practice. Two little daughters of a schoolmaster, aged respectively 8 and 10 years, had for a year and more glandular swellings in the neck, of the size of a large hen's egg. Ointment of iodide of potassium failed. With iodoform, applied in the manner above described, they were cured in a few weeks.

Of many similar cases, in all of which iodoform subdued that which had obstinately resisted iodide of potassium, I relate one which appears remarkable, since the cartilaginous hardness of the tumour had led me to doubt the efficacy of the remedy, in which I already placed much trust. A chambermaid had on the right side of her neck a tumour as large as a middle-sized hen's egg, and as hard as cartilage. She had been disfigured by it for many years; and, although it was not painful, she desired its removal. I applied iodoform in the form of ointment (1 in 15). At the end of three months a very favourable effect was produced; she assiduously followed up the treatment, and within a year the swelling had disappeared.

The last case of this kind which I saw was in a man who had in his right inguinal region a large mass of swollen glands. The tumour, which had commenced with pain, had been treated by a medical man with poultices and incisions. But, in spite of the continued suppuration, the groin remained swollen to such an extent as almost to disable the patient from the discharge of his duties. When this condition had lasted three months he asked my advice. In four weeks, iodoform ointment effected a complete cure.

This favourable experience of the efficacy of iodoform in combating swellings

of the lymphatic glands, was crowned by the improvement obtained in a case of splenic leuchæmia. The subject was a lady whose spleen was doubled in size, and could be easily felt by the hand. Her blood contained one white corpuscle to fifty red, in place of the usual proportion of one to 357. The principal symptoms were prostration, pallor, obstinate diarrhœa, especially severe at the menstrual periods, and a great tendency to acute painful œdema. There was no hemorrhage, no engorgement of the lymphatic glands. On the other hand, the patient had two attacks of severe pain in the sacrum and last lumbar vertebræ, probably dependent on the participation of the marrow of the bones in the disease. The case might then be considered as one of splenic and myelogenous leuchæmia, but remarkable for its severity and long duration. When she first came under my care in January, 1870, she had for several months remained in bed. She did not tolerate quinine, nor iron, nor any other metallic remedy. On the other hand, she obtained advantage from aromatic baths of 26 to 27 Reaumur (90.5 to 92.75 Fahr.), continued for not more than three minutes, and from painting over the region of the spleen with iodoformized collodion; this treatment was commenced in the autumn of 1871. The diarrhœa required appropriate treatment from time to time. Fortunately, the patient's appetite never failed; she could digest venison and other nutritious food. The swelling of the spleen returned several times, but was always restrained by the external application of iodoform. The proportion between the two kinds of blood corpuscles has for some time become normal.

I do not by any means assert that the remedy for leuchæmia has been found in iodoform. The cure is not sufficiently complete, nor the case severe enough; and I have not had an opportunity of trying the same treatment in other cases; but the result of this first attempt seems to encourage further trial.

From the time when I verified the solvent effect of iodoform, I applied it repeatedly in the treatment of the swollen and indurated inguinal glands of syphilis. In these cases I gave protoiodide of mercury according to Simon's excellent method, or iodoform in pills, in doses varying from 5 to 10 centigrammes ($\frac{1}{4}$ to $1\frac{1}{2}$ grain) in the day; its effects were so salutary, that I can warmly recommend iodoform in the treatment of syphilis.

Judging from the related facts, iodoform, before promoting absorption, should determine the destruction of the primitive elements. This may be said to be its *modus operandi* in orchitis, in which I have several times obtained resolution in a period varying from five to eight days, by the application of iodoformized collodion.

In cases of effusion into serous cavities, iodoform has surpassed my expectation. By painting with iodoform dissolved in elastic collodion, I have seen fluid dispersed which had collected in the pleura, pericardium, and peritoneum, and beneath the arachnoid.

In the case of a lady, wife of a well-known officer, who suffered from insufficiency of the tricuspid valve, I twice obtained absorption of a dangerous pericardial effusion.

At Nervi, some years ago, a gentleman, aged 45, the subject of pulmonary tuberculosis, had ascites to such an extent that he could only remain in a semi-recumbent position on his back, and could not bend his body. I thought that paracentesis would be required, in spite of the anæmic state of the patient. I determined, however, to try iodoformized collodion, giving at the same time diuretic pills. The collection of fluid disappeared in about fifteen days, with an abundant discharge of urine; and it did not return during the remaining year and a half of the patient's life. From that time, I have made it a rule not to advise paracentesis, without having first tried the external application of iodo-

form. I confess that it is not always efficacious. We cannot be surprised at this, since in many cases we cannot eliminate the cause of the exudation of the fluid, we cannot prevent it from again collecting, and the obstacle to the circulation may be so great that no treatment succeeds in stimulating absorption.

Of all the satisfactory results which I have obtained from the application of iodoform, the greatest has been in the acute hydrocephalus of children. In recent years, I have reported three complete cures among five cases of this fatal disease, two of which appeared to be in a truly desperate condition. The fixed look, the lost senses, the sopor, the convulsions, the sunken abdomen, the vomiting, the unfrequent pulse, the dilated and unequal pupils, the tonic contraction of the cervical muscles, completed a picture which could be easily recognized. I ordered iodoform, dissolved in collodion, or in the form of ointment, to be applied three or four times daily to the cervical region, and over the mastoid processes, the forehead, and the temples. I must not omit to state that the children at the same time had small doses of calomel, and purgative clysters.

I will here mention a case of prepatellar cystic hygroma. The subject was a valet in a large house, who, having to keep polished the furniture in the rooms, was obliged often to kneel on his right knee. With paintings of iodoformized collodion, the swelling of the bursa in front of the patella was reduced in fifteen days, although it had already existed as many months.

In chronic arthritis, also, I have had much reason to praise iodoform. Two cases are particularly memorable. One was that of a little girl nine years old, daughter of a teacher of swimming, who, in April, 1875, when I undertook to treat her, had been suffering for nine months with inflammation of the left knee. The suppuration was very diffuse, and the child suffered severe pain and was much weakened. The use of iodoform dissolved in collodion, of iodide of iron in the form of Blancard's pills, and absolute rest, so far restored her that in May, 1876, only a slight stiffness of the joint remained.

The other case was one of fungous inflammation of the articulations of the left foot in a boy aged 15. He had been confined to bed many months, and his parents had no further hope. Two very skilful surgeons had declared that there was no resource but amputation; but, his parents not consenting, the patient was removed from the hospital. The left tarsus was about twice as large as the right, and was surrounded by eight or nine supporting and fungating sores; in more than one spot, the suppuration reached the bone. There was no pain. I had iodoformized collodion applied twice daily to all parts of the foot where the skin remained sound, and the ulcers were first treated with chamomile baths, and afterwards with solutions of nitrate of silver (2 to 10 per cent.); iodide of iron was given internally. At the end of a year, the boy could walk, the sores were all healed, the tarsus was scarcely swollen, and all movements were possible, though less free than in the other foot. He had no return of the disease, although he committed several imprudent acts. At present he is able to work; and his parents who had resigned themselves to seeing him perish, rejoice in the possession of a robust lad.

From all that has been said above, iodoform appears to be a remedy which has a powerful resolvent action, and causes the absorption of formative elements and of collections of exuded fluid. But to these effects it unites the valuable property of assuaging pain. This may be proved in attacks of gout. I have often succeeded in removing or in considerably relieving the most severe pain and other inflammatory symptoms of gout, within twenty-four hours, by painting the parts with iodoformized collodion.

Less certain is the success of iodoform in chronic rheumatism affecting several

joints, and I have found it quite unreliable as a remedy against the pain of acute articular rheumatism.

As a sedative remedy, I have used iodoform in a large number of cases of neuralgia, mostly intercostal, cardiac, sciatic, and articular. I have most frequently applied it dissolved in collodion, but have also used it in the form of ointment.

In one case, intercostal neuralgia was accompanied with syphilitic myocarditis, without disease of the valves. The patient, a merchant at Alba, was affected on the slightest movement, even a short walk, with giddiness and spasmodic pain in the region of the heart. He was cured by the internal and external use of iodoform; but he had to continue the treatment with short interruptions for several months. He took internally from 5 to 10 centigrammes in twenty-four hours, in the form of pill.

Patients very often present themselves, complaining of intercostal pain in the region of the heart, radiating towards the left clavicle. Such persons not unfrequently feel palpitation, and fear that they have disease of the heart, although they are quite free from it. These patients are comforted if an opportune treatment free them from their pains; and the external application of iodoform fulfils this object admirably. Along with the pains, the unfounded dread of cardiac disease at once disappears.

Although desirous to avoid making a complete enumeration of the services which iodoform has rendered me, I must make brief mention of a case in which I cured a true neuritis following typhoid fever in a young man, and affecting the trunk of the left sciatic nerve. When the patient sought my help, in the autumn of 1870, his sufferings had already lasted several days. The slightest pressure on the nerve caused intolerable pain; and the patient, who in other respects might be called convalescent, was obliged to remain motionless in bed. The pain was very soon relieved by iodoform; but the leg remained so weak, that for several weeks the patient walked on crutches: and he did not recover perfectly until after a prolonged stay at Nervi.

A remedy which combines in itself antiphlogistic, resolvent, and sedative properties; which embraces a field of action extending from neuritis to neuralgia, from leucæmia to tuberculous meningitis, from lymphoma to collections in serous hæmorrhæ, from attacks of gout to hygroma; a remedy which in the multiplicity and energy of its action competes with quinine and with cold water, might be regarded as miraculous, if it had not its defects like every other good thing. Fortunately, however, these defects will not be very detrimental to the services which it is capable of rendering to suffering humanity.

The most important defect in iodoform is its penetrating odour, which is much more perceptible when it is used with collodion than when applied in the form of ointment. Its internal use is sometimes followed by disagreeable eructations. It cannot indeed be said that the odour is repulsive; it is rather oppressive. In the collodion solution, it reminds me of a photographer's laboratory. In order to overcome the objections arising from this odour, the following rules should be followed.

The box of iodoform ointment, or the bottle of iodoformized collodion, should be kept at a distance from the window, in a well-closed tin case; this retards the decomposition of the iodoform, which goes on rapidly in the light. The surface to which it is applied should be covered by a layer of thin gutta percha. Finally, unless its action be urgently required, the application should be made only in the evening; preference being given to the ointment, which in the morning can be easily washed off with a little soap and water, so as to leave no smell.

Another defect of iodoform is, that it sometimes causes palpitation. I have as yet not often observed this; but it repeatedly occurred in a hysterical lady for

whom I prescribed iodoform internally as a remedy for hemicrania. This defect, however, causes me to recognize a conspicuous advantage, which I desire to see confirmed by later experience.

Some months ago, I had under my care a lady, wife of a professor of literature, suffering from mitral insufficiency without compensating hypertrophy of the left ventricle. Irregularity of the heart-beat was the most troublesome symptom of the exhaustion of the cardiac muscle in its attempts to overcome the obstacle. She had *malaise*, diminution of urine, nervous attacks, oppression, and dyspnoea. The radial pulse was often scarcely perceptible. Very small doses of digitalis (30 or 40 centigrammes in infusion, in twenty-four hours) several times produced a sensible improvement; but the stomach did not bear it well, and it therefore became necessary to suspend the use of the remedy before a satisfactory advantage had been obtained. Remembering the experience referred to above, I had recourse to iodoform, which I prescribed in doses of 6 or 7 centigrammes (about 0.9 to 1 grain daily) in the form of pills. The patient had scarcely taken it two days, when I found the heart's action regular and the radial pulse well developed. The heart, which seemed to have given up all rhythm, had regained a regular beat. The same success was repeated several times in this patient, at intervals of various length.

This and similar observations justify us in asking whether iodoform, administered internally in daily doses of 5 to 10 centigrammes, may not compete with digitalis—I mean those small doses of digitalis which render the action of the heart stronger and more regular.

Iodine is found in the urine after the external and the internal use of iodoform, but rather more slowly after the former than after the latter. In either case, the complete elimination of the medicine requires much time, so that traces of iodine may be found in the urine at the end of four or five days.

Allied in constitution to chloroform, iodoform is in many cases a valuable narcotic; but to the quality of relieving pain it adds in a high degree the effects of a powerful preparation of iodine. Neither iodide of potassium nor pure iodine can be compared with iodoform, when we consider its efficacy as a promoter of resolution and absorption of tumours and exudations. It seems probable that the surprising effects of iodoform are to be attributed to the facility with which iodine is liberated from it, so as to act in a nascent state on the elements of the organism.

Notwithstanding the inconveniences which I have not wished to conceal, I dare promise for this remedy a great future.—*London Med. Record*, Nov. 15, 1878.

The Action of Salts of Lime.

The therapeutical use of lime-salts in the treatment of disease other than that of the intestinal canal, is supported more upon observation in disease than on pharmacological experiment. Few attempts have been made to ascertain what evidence is to be obtained of their absorption into the blood, on which, of course, their general effect must depend. It is a question of much interest, since it is hardly necessary to mention that most of the compounds of lime are among the least soluble of substances which are given internally. Such observations are of more interest since it is probable that the power of absorbing lime-salts varies very much in the different classes of animals. Buchheim-Körper, for instance, gave dogs and rabbits, which were fed on bread and milk diet, a considerable excess of earthy phosphates—to the dogs in the form of bones, to the rabbits as the pure salts. He found that in the case of the rabbits a large excess of these salts was absorbed, and was excreted with the urine, while in the case of the dogs

the whole excess of the earthy salts passed away with the feces, and that even less was absorbed into the blood than under normal conditions. The weight of these observations is, however, lessened by the fact that the form given to the two sets of animals was not precisely the same.

Neubauer found that in the case of man the excretion of lime by the urine could be distinctly increased by its administration by the mouth. He gave to each of four young men a gramme of some lime-salts every night at bedtime, having previously determined the average daily excretion of lime in each case. In the first subject the normal excretion of lime, .303 grm., was raised to .397 grm. by chloride of calcium. In the second the normal, .267 grm., was raised to .310 grm. by carbonate of lime. In the third the normal, .282 grm., was raised to .324 grm. by acetate of lime. And in the fourth the normal, .387 grm., was raised to .489 grm. by phosphate of lime. Thus the urine contained in the case of carbonate and acetate of lime about one-twentieth of the quantity ingested, and in the case of chloride and phosphate of lime it contained about a tenth.

Riessell found that when carbonate of lime is given internally it appears in the urine as phosphate, showing that a change of acid occurs in the alimentary canals or in the blood. The carbonic acid is probably liberated in the stomach, but the portion of the lime which is not absorbed again combines with carbonic acid in the intestinal tract, passing away as carbonate. The transformation into a phosphate led to the expectation that the excretion of phosphoric acid might be increased by the ingestion of lime-salts. Riessell accordingly administered to a man ten grammes of chalk three times a day. He found at first a large increase in the amount of phosphoric acid excreted, but the excess soon lessened, and the amount fell to the normal. The natural relation between the alkaline and earthy phosphates was reversed. The alkaline salts became much smaller in quantity, while the earthy salts increased. The conclusion was reached, and corroborated by further observations, that phosphate of lime is formed in the alimentary canal, and is absorbed with difficulty on account of its low solubility, most passing away by the feces, that the constant presence of considerable quantities of the phosphate gradually overcomes the resistance to absorption, and that a corresponding increase occurs in the amount of lime absorbed and excreted. These observations were in part corroborated by Soborow, although Zalesky failed in the case of young pigeons to find any increase in the earthy constituents of the bones on the addition of a larger quantity of lime-salt to their diet.

The latest investigations on the subject have been carried out in Salkowski's laboratory by Dr. Leopold Perl, who has published his conclusions in *Virchow's Archiv*. He employed especially chloride of calcium, and found, in the dogs to which it was given, an undoubted increase in the excretion of lime by the urine, although this corresponded to only a small fraction of the amount of lime administered. It was difficult to ascertain what that fraction was, since the amount of lime-salts in the food varies, and so also does that which is set free in the organism in the process of tissue regeneration. An estimation of the amount of urea excreted suggests that a larger destruction of albumen occurred before the lime was given than during its administration, and this probably entailed the liberation of a larger amount of lime. During five days before the addition to the food a total of .153 grm. of lime was excreted; in the five following days, .325 grm.; and thus at least .190 grm. was apparently due to the calcareous diet; 7.12 grms. of calcium chloride was given, of which only 5.2 per cent. passed away in the urine. The amount of chlorine excreted was very remarkably increased by the diet, altogether 6.14 grms. passing away. The amount of calcium chloride taken corresponded, however, to only 4.6 grms., and thus all the excess of chlorine was

eliminated, and in addition nearly half as much more. Another experiment, with the same dog, demonstrated that the quantity of chalk which, according to the first experiment, was not excreted could actually be found in the feces. It thus appears that the chlorine and the lime have different destinations. The probable explanation of this is that the calcium chloride is decomposed by the alkaline secretions of the intestine, especially the bile and the pancreatic juice, carbonate of lime and chloride of sodium being formed, the former being eliminated by the feces, the latter absorbed. But the whole of the chlorine of the urine is not in combination with sodium; a little of it is perhaps free as hydric chloride, but more is combined with ammonium. The probable explanation of this lies in the observation of Gaethens that if acids are administered to dogs there is no increased excretion of bases, or only a slightly greater excretion than normal. No doubt most of the acid is neutralized in the intestine, and the alkaline carbonates which normally return as such into the blood, are decomposed, and the blood receives only neutral salts. If, in the system of a carnivorous animal, a considerable portion of free alkali is neutralized in one place, there is corresponding deficiency at another place—i. e., more acid is eliminated by the urine. Walter has shown that these acids are for the most part combined with ammonia, which is formed in the carnivora in increased quantity when acids are given. Calcium chloride appears to act exactly, or almost, as an acid; it takes up in the intestine a certain quantity of alkali, which would otherwise have returned into the blood, and a corresponding amount of free hydrochloric acid, or more probably of ammonium chloride, must appear in the urine.—*Lancet*, Oct. 12, 1878.

On the Muriate of Pilocarpine.

Herr A. FRANKEL communicates (*Charité Annalen*, Band iii., 1878) the results of his experiments on dogs, made for the purpose of ascertaining the physiological and therapeutical action of the muriate of pilocarpine. Injection into the jugular vein of small doses (4 centigrammes = 0.6 grain) gave insignificant results. In increasing the dose, there resulted a considerable diminution in the frequency of the pulse, persisting after division of both vagi, disappearing after the injection of morphia, and not recurring after renewed injection of pilocarpine. The author supposes that pilocarpine acts on the peripheral ends of the vagi, exciting the cardiac inhibitory nerves; it is antagonistic to atropia. He further relates three cases of nephritis and one of bronchial catarrh with much swelling, in which the œdema disappeared entirely after pilocarpine had been injected subcutaneously for some time.—*Lond. Med. Record*, Nov. 15, 1878.

Medicine.

The Pathological Excretion of Carbohc Acid.

It has been shown by Städelcr that phenol, or carbohc acid, is a constant constituent of the urine, and in 1876 Salkowski described four cases of disease, two of them diffuse peritonitis, in which the amount of phenol was abnormally increased. Quite recently, Dr. Brieger of Berne has carefully examined the subject in Herr Nencki's laboratory at Berne, especially with a view to determine what relation there is between the decomposition of albuminous substances in the

bowel and the amount of phenol excreted—as Baumann has proved that this body is a product of the putrefaction of albumen, and Brieger that it is a normal constituent of the contents of the bowel. The account of Brieger's researches, and of others bearing on the same subject by Drs. Odermatt and Schaffer, with a controversial communication from Professor Salkowski, will be found in the *Centralblatt f. d. Med. Wiss.*, Nos. 30, 31, 34, 1878, from which the following particulars are taken: The carbolic acid in the urine is estimated by distilling the latter with dilute sulphuric acid, and precipitating the phenol as tribomphenol. In healthy persons on ordinary diet the daily excretion of phenol is about 0.0158 gramme. In gastric cancer it rose in two cases to a mean of 0.025 to 0.061. In three cases of phthisis the excretion was quite normal, and in only one of three cases of typhoid fever was there a trifling increase. In a case of English cholera the mean was 0.052. In peritonitis, as Salkowski had previously stated, the quantity excreted rises enormously, *e. g.*, to 0.3018 gramme in one case, and to 0.138 in two others. It is extremely interesting to notice that in *septic conditions the largest excretion of phenol occurs*. Thus, in a case of gangrenous empyema with pleural fistula, Dr. Brieger obtained 0.3112 gramme from the urine on the second day after the patient's admission to the hospital. On the third day, when the previous fever had subsided and the pus had been rendered inodorous by injections of iodine, 0.6309; on the fifth day 0.0226, and on the ninth 0.1098 gramme in twenty-four hours. As Dr. Brieger expresses it: "It is extremely remarkable that the same body which we use as our most powerful antiseptic should itself be developed in the largest quantity within the animal organism during septic conditions, and we may expect that determinations of the amount of phenol excreted in septic diseases will help to make their *rationale* more intelligible." We have already in previous articles (*Medical Times and Gazette*, September 22, 1877, and December 29, 1877) dealt with the subject of the excretion of indican in the urine in various diseases; and as it is probable that indican is derived from indol, a product of the decomposition of albuminous substances in the bowel, it is important to know whether the excretion of indican and phenol run parallel to one another. Brieger finds that they do in some diseases, but not in others. Thus in peritonitis the excretion of both is abnormally large, while in anæmia and in certain cachectic states the phenol secretion is subnormal, while that of indican is increased. Some light may eventually be thrown on the relation between the excretion of these two bodies by the experiments of Brieger and Odermatt with various decomposing albuminous substances. They found that at a temperature of 40° Cent., and with free access of air, the quantity of indol, from which, as just stated, indican is derived, increases in the early stages of putrefaction, and gradually diminishes as putrefaction proceeds; while the quantity of phenol produced is inappreciable during the first few days of the process, and then steadily increases until the whole of the albumen has been decomposed. Another point which throws some light on the relations of phenol to the organism is that which has been brought out by Professor Salkowski and Dr. Schaffer, namely, that if dogs have phenol mixed with their food, rather less than half of it fails to appear in the urine; while, on the other hand, Dr. Schaffer finds that the lost phenol does not escape from the body in the feces. Professor Salkowski has suggested that indol and phenol, which with skatol (a homologue of indol) have been proved by Brieger to be normal constituents of the feces, are not exclusively found in the intestine, but also to some extent in the tissues of the body; but Herr Nencki has never been able to extract either indol or phenol from fresh muscles or glands by distilling their watery extracts. Hoppe-Seyler has also failed to find carbolic acid in the blood, or in any of the liquids of the body. Still, Brieger has obtained an abundance of tribromphenol

by distilling putrid pus with dilute sulphuric acid; and he concludes that in septic conditions the production of phenol is not confined to the intestine. Hence at present it is impossible to say for certain whether the excess of phenol in the urine of disease is due to its increased production somewhere in the body, or, as Salkowski believes, to a failure of the tissues to *destroy* it in its passage through them from its place of origin to the kidneys. Anyhow, the solution of the problem is of great interest to physician and physiologist.—*Med. Times and Gaz.*, Oct. 12, 1878.

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A Case of Neurosis Due to Fright (Schreck-Neurose).

This paper, by Dr. V. HOLST, occurs in the *St. Petersburger Medicinische Wochenschrift*, of the 12th (24th) August, 1878.

While other departments of pathology have been, during the last decade, built upon physiological and anatomical substrata which have served as the bases of systematic classification, in the department of neuro-pathology, including psychiatry, this is not yet possible, or at any rate, only very partially so. Our knowledge of many diseases of the nervous system is, as yet, purely clinical; among these last, many present well-defined and recognized groups of symptoms, and have, therefore, received clinical names; but, besides these, there are a number of cases which occur in the most varied form and guise, so that they cannot be grouped under any recognized name; it is for these that the name neurosis is most useful. By neurosis is meant a nerve-affection, unexplained by pathological anatomy and not capable of being classed under the name of any recognized disease. A neurosis may be more definitely described by speaking of it in relation, either with the anatomical structures most influenced by it (*e. g.*, vaso-motor neurosis), or with the cause to which it is due (*e. g.*, emotion-neurosis, fright-neurosis). The above observations justify the title given to the paper.

It is universally admitted, that powerful psychic emotions, especially fright, are frequently the cause of the most various nervous disturbances. An interesting series of such cases which occurred during the siege of Strasburg, is given by Dr. Kohts, in the *Berliner Klinische Wochenschrift*, 1873. All the cases there described were capable of being classed with recognized diseases of the brain or spinal cord, as were also the cases of "emotion-neurosis," described by Berger in the *Deutsche für Pract. Med.*, 1877, Nos. 38 and 39. The case now to be described cannot be given any clinical name; it can only be called a neurosis; noteworthy points in it are its rapid course and evident cure by a fresh psychic impression.

A labourer, aged 60, stated that he had always enjoyed good health, but was always very susceptible of fright; he had frequently suffered from rigors as a result of sudden fright; but these quickly passed off under the influence of a little diffusible stimulant. Once he had an attack of erysipelas in the leg, which he also ascribed to fright. He had never been intemperate in his habits. One day last March he was greatly frightened by one of his children letting fall a toy from the table, and at the same time shrieking loudly. He at once suffered from an attack such as will shortly be described. The attacks were repeated, with very short intervals, until he was admitted to hospital two days later. Dr. Holst found him walking about in the ward, and had hardly begun to converse with him as to his complaint, when the patient was suddenly stopped in his speech by a fearful grimace; his mouth was widely opened, the eyes became staring, and he uttered a hollow groan. His arms were spread out, and he seized hold of some neighbouring object. On one occasion this was the physician's leg. The patient

then stood firmly for a time with somewhat bent knees, and was evidently unconscious. In one or two minutes the groan changed into loud weeping; then, quite suddenly, the patient's expression became normal, he looked about him with an astonished air, passed his hand several times over his eyes, and said, "Now I am all right again." He was again quite conscious, and answered questions intelligently, but could only describe his attack by saying that something came over him, and that he became unconscious. During half an hour's observation, attacks continued to occur at intervals of from three to five minutes. The individual attacks varied somewhat in form, in that the distortion of the countenance was not always the same; sometimes the patient uttered no sound, and occasionally the attack commenced with an unnatural laugh. The end of the attack was sometimes characterized by quite a remarkable look of utter astonishment; at other times it came on more gradually, the weeping passing into a loud-spoken prayer, with devoutly uplifted arms, during which consciousness had evidently returned. After Dr. Holst had observed a number of these paroxysms, the idea occurred to him to try what would be the effect of a new psychic impression upon his condition. In the middle of an attack, the doctor suddenly ran to his patient, shaking him violently by the arm, and shouting loudly to him, "What has come to you? How dare you misbehave yourself in this way?" He instantly became conscious, looked at the doctor in astonishment, and respectfully asked if he had given any offence. After a short time, another very slight attack occurred; the same procedure was adopted; and the patient, rubbing his eyes, asked what had happened to him. He was then left, no other treatment being ordered. Next day, he was reported to have had no return of the paroxysm. When the doctor entered the ward, the patient at once came and thanked him heartily for having freed him from his trouble. On being asked what had occurred the previous day, he said he only knew that the doctor had come into the ward and frightened him very much, and that this had cured him of his dreaded fits. He also stated that he had felt several slight paroxysms since the previous day; they consisted, however, only in a slight trembling, which, being fully conscious, he was able to overcome without their being noticed by the persons around him. On the next (third) day, as no further symptoms had been presented, he was discharged cured.—*London Med. Record*, Nov. 15, 1878.

Ulceration of the Frænum Linguae in Whooping-cough.

At a recent session the Académie de Médecine received a report upon the importance of ulceration of the frænum linguae as a diagnostic sign in pertussis, by a committee consisting of MM. Roger, Gueneau de Mussy, and Moutard-Martin, to whom a paper by M. Delthil "On the Diphtheroid Ulceration of Whooping-cough: its value, frequency, and relations to the disease," was referred. That author, like many others, considered the ulceration in question to be an initial sign of the disease, preceding the onset of cough, and forming a part of the affection as marked as the eruption in an exanthematous fever. Others, and they are the majority, see in it only the result of mechanical injury to the frænum by the lower incisors when the tongue is protruded in the paroxysm of coughing. The committee reported as follows: That the sublingual ulceration occurs in whooping-cough, and its presence is an almost certain sign that the attack is a severe one. It is purely traumatic in origin, requiring for its formation the propulsion of the tongue, and the repeated friction of the frænum against the incisor teeth in violent paroxysms of coughing. This is proved by its occurrence only during the height of the disease, when the convulsive attacks are most violent, cicatrization taking place as soon as the cough moderates. Further, it has the character of an incision or laceration, whilst its nearly constant seat on

the frænum, which is most liable to be wounded by the teeth, goes to prove the same fact; varieties in its situation depending upon the number, form, and disposition of the teeth. The most positive proof of all in favour of the traumatic view is the absence of the ulcer (even in children well furnished with sharp teeth) in mild cases of whooping-cough, where the paroxysm does not lead to protrusion of the tongue, and its absence also in infants before dentition or in children who have just shed their first set. The report then shows the fallacy of the "specific" view, and proves that it is not "diphtheroid" at all in its nature, and concludes by stating that ulceration of the frænum has no pathological significance, since it is only a local complication and an accident of the disease; but as "it is not met with in any other affection it becomes in certain cases a symptom of value—a certain sign of whooping-cough, and usually of a severe attack; it thus acquires great semeiotic value." The only question that occurs is whether it required so learned a commission to give us this assurance. The "value" of the symptom is minimised by its occurrence only, or mostly, in well-marked and severe cases.—*Lancet*, Nov. 16, 1878.

Experiments on the Contagion of Phthisis.

The remarkable instances now and then seen, in which persons without hereditary tendency to phthisis become phthisical after long-continued attendance on sufferers from the disease, have suggested to many physicians the idea that phthisis is contagious. If there is such a contagion, the mechanism has been supposed to be the inhalation with the breath of fine particles of tuberculous sputa, atomized into the air by the patient's cough. An attempt has been made by Dr. TAPPEINER, of Meran, to ascertain whether by a similar means animals could be rendered tubercular, and the results of the experiments, which are published in the current number of Virchow's *Archiv*, are of great interest. The animals experimented on were made to breathe for several hours daily in a chamber in the air of which fine particles of phthisical sputum were suspended. The sputum having been mixed with water, the mixture was atomized by a steam atomizer. In all cases the sputa were from persons with cavities in their lungs. Dogs alone were employed in the experiments, since they very rarely suffer from spontaneous tuberculosis. The result was that of eleven animals experimented on, with one doubtful exception, after a period varying from twenty-five to forty-five days, all, being killed, presented well-developed miliary tubercles in both lungs; and in most of the cases tubercles were present to a smaller extent in the kidneys, and in some cases also in the liver and spleen. Microscopical examination was in accord with the naked-eye appearances.

The quantity of sputum necessary for the effect is certainly a very small one. In three experiments only one gramme of sputum was daily atomized in the air of the chamber, and the quantity of dry sputum must have been exceedingly small. Two ways are conceivable in which the infection is produced. The particles certainly may reach the alveoli, for powdered cinnabar administered in the same way was found to have stained the alveoli in twelve hours after an inhalation of only one hour's duration. But some particles may lodge in the mucous membrane of the throat and pharynx, and thence, being absorbed, may affect the lungs as organs specially predisposed. Hence some comparative experiments were made by feeding dogs with the same sputum as that employed in the inhalation experiments. Fifteen grammes were mixed daily with the food of each dog. In two dogs fed at Munich miliary tubercles were found in the lungs after six weeks' feeding: in six others fed at Meran all the organs were normal—a difference the explanation of which is not very clear. In the cases in which the disease was produced by feeding, the intestinal tract was affected, whereas it was

free in those cases in which the inhalation was employed. It is remarkable that, with two exceptions, the animals, up to the time at which they were killed and found diseased, were well and lively, and indicated their disease neither by emaciation nor other external symptoms. This suggests that sometimes in man a miliary tuberculosis of the lungs may remain latent, and cause no symptoms until catarrh, with foci of inflammation, sets up phthisis.

A preliminary account of these experiments of Tappeiner led Dr. Max Schottelius to make some similar experiments, not only with the sputum of phthisical individuals, but also with that of persons suffering from simple bronchitis, and with pulverized cheese, brain, and cinnabar. The result was that miliary tubercles were found in the lungs in all cases, and in equal quantity with both phthisical and bronchitic sputum. Cheese produced a smaller quantity; pulverized brain still less; and the cinnabar least effect of all, merely a few whitish tubercles with pigmented centres, with an interstitial deposit of the substance, which had caused no inflammatory reaction. Tappeiner has also experimented with calves' brains in two cases, but with purely negative results. No changes in the lung followed such as resulted from the inhalation of tuberculous sputum.

These experiments are of much interest, but they need repetition on a larger scale, in order that the discrepancies may be removed, before much weight can be attached to them as evidences of a specific influence of the phthisical sputum. They unquestionably show, however, that the inhalation of foreign organic matter will cause tubercles in animals naturally indisposed to their development. The appearance of granulations in other organs than the lungs in some of Tappeiner's experiments is a fact of great importance. Whether tuberculous matter produces tubercle when given in this manner more readily than other substances or not, it appears certain that different forms of organic matter produce effects in different degree. It appears also that the inhalation of these substances is more effective than their administration by the alimentary canal. These are facts of great importance in regard to the question of the contagiousness of phthisis.—*Lancet*, Nov. 23, 1878.

Experimental Pathology of Valvular Disease of the Heart.

The symptoms and effects of valvular disease of the heart may seem to be almost beyond the reach of experimental pathology; but it is not so, and a series of investigations undertaken by Dr. OTTOMER ROSENBACH in the Pathological Institute at Breslau, and detailed in a recent number of the *Archiv. für Experim. Pathologie*, possess considerable interest to cardiac pathologists. They indicate some new facts, and confirm in a striking manner the conclusions reached by clinical observers. The points for investigation were: (1) What influence on the blood-pressure has the destruction of one or of several valves? (2) Does compensation occur immediately, or only after a certain time? How is it produced, and how far is the supplemental power of the heart effective? (3) When, and under what circumstances, is endocarditis produced, and what are the consequences thereof? (4) What conclusions of clinical interest are suggested by the experiments?

The observations were made on dogs and rabbits, both with the assistance of curara and morphia, and (in rabbits) without. The blood-pressure was measured in the crural or carotid artery. The aortic valves were injured by means of a sound introduced into the right carotid artery, the injury to the valves being immediately manifest by the effect on the sounds of the heart and upon the pulse. The mitral and tricuspid valves were damaged by means of the valvulotome of Klebs, by which the mitral valve can be divided by the introduction of the in-

strument through the carotid artery into the left ventricle, and the tricuspid valve by its introduction through the jugular vein.

The significance of the first point investigated—the effect of the valvular lesion upon the blood-pressure—is very important. The same forward movement of the blood will require an increased exertion of the muscular tissue of the heart, if a resistance is interposed, as in stenosis, or an increased mass of blood has to be moved, as in regurgitation through the aortic orifice. If this increased power is brought into operation gradually, in consequence of an increase in the muscular tissue—hypertrophy, etc.—the damage to the valve will be followed immediately by a greater or slighter fall in the arterial pressure. The answer which experiment gives to the question is that there is no such fall. Before and after the operation the blood-pressure is precisely the same. Moreover, immediately after great valvular damage, the blood-pressure may be a little higher than before the operation, probably in consequence of the mechanical irritation of the muscular tissue of the heart-muscle, or of a reflex stimulation through the vaso-motor nerves. When this immediate disturbing effect has passed away the pressure is found to be just the same. The permanent over-action of the heart necessary to maintain the blood-pressure leads to its hypertrophy. The reserve of force which the heart possesses enables it to maintain its due action from the first. This effect is the same whether the valvular change is one by which obstruction or incompetence is produced. It is evident, therefore, that the latent reserve of cardiac force is a very large one, and the reserve is manifestly of paramount importance for the maintenance of the circulation. Several of ROSENBAACH's experiments show that this reserve maintains the pressure, even in the face of grave valvular damage, for many weeks—until, indeed, hypertrophy is developed. The details of the experiments prove that in all cases the first structural change was dilatation, and that the hypertrophy was secondary in time to the dilatation, but never sufficient to effect a perfect structural compensation, although dynamically the compensation was complete. Another point of interest is that there was very constantly developed an aneurismal dilatation of the apex of the heart, and also a fibrous degeneration of the mitral papillary muscle.

With respect to the production of endocarditis, the results may be classed under three heads. In the first group are a series of cases in which, in spite of destruction of a valve, or tearing the chordæ tendineæ, no inflammatory appearances, or, strictly speaking, no deposits of fibrin, were found in the neighbourhood of the injury. This was the case with a few of the dogs and with all the rabbits experimented on. In a second group are those cases in which more or less abundant vegetations of fibrin were found at the seats of damage, but in which the most careful examination revealed no foreign organisms in the deposit. All the cases, with the exception of two, come into this group. The valves beneath the fibrinous deposit presented indications of moderate inflammation and cellular multiplication. Lastly, there are two remarkable cases in which not only the deposits on the injured valves contained micrococci, but also areas in other organs infarcted by emboli. The post-mortem appearance was exactly that of ulcerative endocarditis, with the usual consequences—hemorrhages in all organs with more or less abundant bacteria in the spleen, kidneys, pleura, intestine, bladder, and retina. These different results ROSENBAACH explains as follows: If clean instruments are employed, and used in the shortest possible time, no inflammatory reaction follows. If clean instruments are used, but the operation done slowly, the soft parts bruised, and the endothelium a good deal damaged, inflammation follows, with an abundant deposit of fibrin. The source of the organisms in the micrococcal endocarditis is obscure.

The lesions of the valves thus produced artificially gave rise, in some cases, to

the characteristic murmurs, and in others to none at all. The narrowing of an orifice produced by placing an instrument within it caused no murmur in any case—a very remarkable result which the experimenter cannot explain, but which, we think, finds a ready explanation when the mechanism of murmurs is carefully considered. In all cases in which the edge of one of the cuspid valves was torn, and in most in which a tendinous cord was divided, a very distinct systolic murmur was produced. These fibrinous deposits on the valves seemed to have little influence on the production of a murmur. The difference in this respect between clinical and experimental observation is, no doubt, to be found in the different state of the valves which underlies the vegetations in the two cases. The aortic valves seem susceptible in some cases of considerable damage without the generation of a murmur, although in others a diastolic murmur was heard immediately after the injury. This difference was in part explained by post-mortem demonstration of the fact that the vegetations were capable to a considerable extent of preventing incompetence. The loudest murmur was heard in a case in which there was no deposit. The systolic apex murmur, which is so common in aortic regurgitation, and in this country is commonly ascribed to mitral inefficiency, was noted by Rosenbach in several cases in which the aortic valves had been injured, but he is inclined, on both experimental and clinical grounds, to associate it with the fibrous degeneration of the papillary muscles, which he finds so frequent a consequence of aortic disease. This degeneration is supposed, however, to produce the murmur, not, as most think, by permitting regurgitation, but by lessening the tension of the valves, diminished tension of these valves, according to an unproven theory of Traube, causing a murmur instead of a sound.

These experiments afford thus an interesting confirmation of the results of clinical experience. They confirm experimentally modern views of the origin of hypertrophy, and the sequence of hypertrophy and dilatation, as stated in recent treatises, and they illustrate several very important facts regarding the origin and symptoms of certain forms of endocarditis.—*Lancet*, Nov. 2, 1878.

Concentric Hypertrophy of the Heart.

M. DÉJÉRINE, in a communication to the Société Anatomique (*Progrès Médical*, August 3), reports a case of idiopathic concentric hypertrophy of the heart in a lad aged eighteen, whose work obliged him to carry heavy loads. He had never had rheumatism, and there was no history of alcoholism or syphilis. He died of ascending myelitis. There was no abnormality of the heart to be observed during life, except a little exaggeration of the impulse. At the necropsy the heart was found of normal size, but the "left ventricle was much larger and harder than natural; and on section its walls were more than three centimetres (an inch) thick, and the cavity only represented by a narrow slit, scarcely admitting the point of the index finger." There was no interstitial nephritis.—*London Med. Record*, Oct. 15, 1878.

Pulsus Bigeminans and Alternans.

E. RIEGEL, in the *Deutsches Archiv für Klinische Medicin*, Band. xx, has observed fifty-nine cases of pulsus bigeminans and alternans in the course of a single year. He, therefore, argues that they are not of unfrequent occurrence. The cases were mostly old people, with atheromatous arteries; but these conditions have been met with under all circumstances, in anæmia, cachexia, heart disease, cerebral diseases, and in febrile attacks. The pulsus bigeminans and alternans is frequently varied with an entirely irregular, and sometimes with a perfectly normal pulse. The variation, therefore, is simply an irregularity which

makes its appearance when there arises a want of adjustment between the power of the heart-beat and the work to be done; consequently such variation does not possess the unfavourable prognostic importance which Traube has assigned to it.—*London Med. Record*, Oct. 15, 1878.

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Relation between Cardiac Hypertrophy and Renal Disease.

Dr. SENATOR, of Berlin (*Virchow's Archiv*, Band lxxiii., Heft*3), discusses this question at some length. He considers that where no obvious mechanical cause of cardiac hypertrophy exists, the explanation is to be found in the state of the blood in chronic parenchymatous nephritis and in the state of the terminal arterioles in chronic interstitial nephritis; in the latter it often happens that hypertrophy exists without dilatation, or even with narrowing of the cavity of the ventricle; these cases he regards as idiopathic primary hypertrophy, as he says hypertrophy consequent upon obstruction, or difficulty in discharging the contents of the ventricle, must be associated with dilatation. The cause of this idiopathic hypertrophy may be nervous, as in Basedow's disease; or more probably it may be due to some state of the blood. The high tension in the aorta is due to the state of the terminal arterioles. He leans to Gull and Sutton's theory, and believes that the kidney-affection is a consequence or concomitant of the general disease.—*London Med. Record*, Oct. 15, 1878.

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Bright's Granular Atrophy of the Kidney and the accompanying Cardiac Hypertrophy.

VON BUHL (*Centralblatt für die Med. Wissenschaften*, September 14, 1878) opposes the views of Traube and of Gull and Sutton by the following considerations: 1. There is eccentric hypertrophy of the left or both ventricles without granular kidney (25.7 per cent. according to Gull and Sutton). 2. There are cases of exquisite granular kidney without hypertrophy and dilatation (in quite 8 per cent.). 3. In granular kidney, the hypertrophy of the left ventricle is often unaccompanied by dilatation (0.6 per cent.). 4. General dilatation of the whole arterial system is absent; this would be an important consequence of increased tension. 5. All other renal atrophies (congenital cystic kidney, hydronephrosis, fatty kidney, etc.) do not bring about eccentric hypertrophy of the left ventricle. 6 and 7. The hypertrophy of the right ventricle is not explained by Traube's theory (simple hypertrophy of the left ventricle in 21.4 per cent. against double-sided hypertrophy in 70.8 per cent.); also this is not explained by fatty degeneration of the muscular wall of the left ventricle, as this is often absent even when the right side is fatty. 8. The hypertrophy of the left ventricle is often present before the granular degeneration of the kidney (Bamberger, Schrötter). Against Gull and Sutton's theory he urges again, first, that at the commencement of the renal disease the fibroid thickening of the arteries and veins is not present; and, secondly, that nearly always the kidneys are the only organs involved, seldom any other. The last point is very striking, if arterio-capillary fibrosis were the cause of the renal degeneration as part of a general process.

Von Buhl's views are the following: 1. Both organs become diseased together. The hypertrophy is to be attributed to the increasing capacity of the heart. This view is supported by the appearance of cardiac hypertrophy before the atrophy of the kidney, and the eccentric hypertrophy of the right ventricle; also by the fact that we frequently find remains and results of previous inflammation of the heart, the origin of which can hardly be fixed, at the beginning of the disease; 35 per cent. of pericarditis; 20.6 of valvular disease, endocarditis, and vegetations; 55.9 per cent. of retained sufficiency of valves, with inflammatory fatty

degeneration of the muscular fibre; 9.8 per cent. of aneurism, ruptured heart, and vitreous swelling of muscles. 2. The myocarditis may leave the heart unchanged, but atrophy may occur, though hypertrophy is the more common. The hypertrophy is effected in the following manner: In the first place, the cavities of the heart dilate on account of the diminished resistance of the heart-muscle to the blood-pressure. At the conclusion of the inflammatory process, the heart-muscle hypertrophies by over-nutrition, and by the increased work of the dilated ventricles. The fact is quite new that a relative narrowing of the aorta often coexists. To overcome the resistance of the narrowed aorta the left ventricle must hypertrophy. 3. The increased tension in the aortic system, and the cardiac hypertrophy, are not due to the granular atrophy, nor to a diffused capillary fibrosis; but, on the contrary, the increased tension in the aortic system is dependent upon the hypertrophy of the left ventricle and the relative stenosis of the aorta. The increased tension is, on account of the shutting of the valves, only systolic. 4. The arterial change is a consequence of the cardiac disease. The thickening of the renal arterioles is secondary. The 13 per cent. of lung-affection (desquamative pneumonia and cirrhosis of lung) is an analogous process to the renal disease. In all other organs the consequences of Gull and Sutton's disease are atrophy and thickening; in these are to be found the causes of death in Bright's disease. In reference to the etiology it must be remembered that immoderate muscular exertion, especially of the heart, leading to myocarditis, eccentric hypertrophy, and the other elements of Bright's disease, must be regarded as a frequent cause of that disease.—*London Med. Record*, Oct. 15, 1878.

Medicinal Treatment of Diabetes Mellitus.

In the *Deutsches Archiv für Klinische Med.*, Band xxi., Hefts 5 and 6, Dr. P. FÜRBRINGER publishes observations on the influence of salicylate of soda, phenol, benzoate of soda, thymol, quinine, digitalis, arsenic acid, bromide of potassium, oil of turpentine, and pilocarpin, on the absolute and relative amount of sugar in the urine.

Inasmuch as the secretion of nitrogen, as well as of sugar, in diabetic patients—at least in severe forms, where, with complete exclusion of carbon-hydrate, sugar is still produced in large quantities—arises from a specific decomposition of albumen, Dr. Fürbringer tries to estimate the pathological importance of each form of diabetes by the *relative* amount of sugar (the weight of the sugar being divided by that of the nitrogen excreted), and from the variations, to arrive at a standard by which to judge of the effect of therapeutical agents. From his observations, he deduces that the greater the relative amount of sugar the more favourable is the prognosis; that a remedy which increases the glycosuria does the less harm, as it increases the relative amount of sugar; and lastly, that a remedy which does not alter the glycosuria is useful, as it increases the relative amount of sugar. In the first two cases the increase is due to a diminished excretion of nitrogen; and the drugs which did good by this means were salicylate of soda (8 to 10 grammes = 120 to 150 grains a day) and carbolic acid pills three times a day; quinine, arsenic acid, pilocarpin, and benzoate of soda gave no definite results; thymol, oil of turpentine, digitalis, and bromide of potassium did harm, and are therefore contraindicated in diabetes.—*London Med. Record*, Nov. 15, 1878.

Syphilitic Leontiasis.

MAURICE RAYNAUD (*Société Médicale des Hôpitaux de Paris*) brings to notice the case of a patient attacked by a new form of cutaneous syphilis, named

by the author syphilitic leontiasis (subject of the inaugural thesis of M. Coutard, one of his pupils, "Study on diffuse syphilis of the face"). The diagnosis of the case was difficult; there are no syphilitic antecedents, but in the mucous membranes syphilitic manifestations are undoubted, scrofula being excluded by the age of the patient, which was 59. M. Coutard, in his thesis, says that syphilis may produce hypertrophic lesions of the skin, the gummy element, instead of being circumscribed, existing in the state of infiltration. In such a case ulceration is not produced, as it is in the dry, tubercular, degenerative form. The face is the favourite seat of this form of syphilis.

In the discussion which followed, M. Besnier said he would call it a case of papulo-hypertrophic syphilis. In passing, he advanced the opinion that iodide of potassium has an insignificant or no effect in scrofula. This was strongly contested by M. Dumontpallier.

M. Libermann, on the occasion of M. Raynaud's observation, read a paper on elephantiasis in Arabs, which was diagnosed as syphilitic on account of syphilitic antecedents in the history of the illness, but not because of its objective characters, and which was cured in three months by subcutaneous injections of the biniodide of mercury, large doses of iodide of potassium, and a strict regimen (milk-diet).—*London Med. Record*, Nov. 15, 1878.

Scleroderma Universalis.

Dr. MADAR, of Vienna, gives an account (*Vierteljahresschrift für Dermatologie und Syphilis*, 1878) of a case of a girl of 17. After a threatening of the disease, relieved by warm baths, she was seized with shivering, followed by swelling of the principal joints. In two months rigidity of the cheeks set in, which was accompanied by pigmentation of the skin and pain, with tension and immobility of the joints. Eight months after, on 6th May, 1877, the face had become rigid as marble, the eyeballs, eyelids, and lips alone being movable. The skin was dense and hard over the trunk and extremities, the abdomen and throat retaining their wonted pliancy. The fingers were distorted and fixed, the joints painful, both on pressure and spontaneously, while there were subjective sensations of tension which became pain on movement. While there was anæmia and amenorrhœa, there was no organic lesion. External treatment alone gave relief; protracted baths, especially those to which pine extract had been added, rendered the skin more pliant and a little motion possible. Faradization mitigated pain, but massage was injurious. Pericarditis, followed by diarrhœa and exhaustion, terminated her life on 8th October. An autopsy, instituted by Dr. Chiari, revealed pleuritic and pericardial adhesions, fatty degeneration of myocardium, with wastings of organs and anæmia. No pathological changes, either macro- or microscopic, were found in the spinal cord or ganglia. The skin contained an excess of pigment, both in the deep part of the rete mucosum and papillary portion of the derma. The reticular part of the cutis seemed thicker than it ought, though its meshes were compressed; there was hypertrophy of the subcutaneous areolar tissue, with disappearance of the fat. The other component structures of the skin were healthy. He regards scleroderma rather as a result of chronic inflammation of the skin than as due to lymphstasis, as held by Kaposi, while Madar considers the essential pathology to be central trophoneurosis; comparing the atrophy of the skin to progressive muscular atrophy.—*Edin. Med. Journ.*, 1878.

Quinia Rash.

At a late meeting of the Clinical Society of London (*Lancet*, Nov. 16, 1878) Dr. FARQUHARSON exhibited a drawing of a case of quinia rash, occurring at

St. Mary's Hospital, in the practice of Dr. Cheadle. The patient, a boy aged fourteen, was admitted with pyrexial symptoms; and after the first suspicion of typhoid was allayed, it was decided to try the effect of quinine in reducing the temperature, which had stood for several days at 100° . Ten grains were accordingly given thrice a day, and on the fourth day a rubeoloid rash appeared universally over the body, composed of flat slightly raised patches of a rose-pink, and accompanied by much tingling and irritation. No other symptom of cinchonism was observed, and on withdrawal of the medicine the eruption rapidly subsided. Quinine symptoms may be divided into two classes—viz., those of an eczematous character, which are described by some continental authorities as occurring on the skin of workers in quinine manufactories; and those which follow the internal administration, usually of very small doses of the drug, and which may be either erythematous or rubeoloid in character. The present case was strongly suggestive of urticaria, which it doubtless was, and it may naturally be argued that the real causation was some chance error of diet. The diagnosis was, however, most amply confirmed by one of the students, Mr. Luscombe, who had suffered two attacks in his own person, precisely similar to this in every respect, save in the addition of very troublesome and long-continued gastric irritation. It is worthy of remark that the quinine not only caused no lowering of the body heat in the first instance, but that on the appearance of the cutaneous eruption the temperature ran up to 102° , the explanation of this probably being that the dose was really too small to produce any decided antipyretic effects.—Dr. GREENHOW said that the rash described could not be put in the same category as the eruptions due to bromide or iodide of potassium, where the rash is the specific effect of the drug. Here, however, the eruption was not distinctive; it was of the nature of urticaria, and was produced by the quinine causing gastric disturbance, just as other ingesta frequently do. The case was of interest and rarity, for although he had prescribed quinine for forty years he had never met with a similar instance.

Surgery.

Case of Polypus of the Oesophagus successfully Removed.

Mr. THOMAS ANNANDALE, Professor of Clinical Surgery in the University of Edinburgh, reports (*British Medical Journal*, Nov. 23, 1878) the following rare case:—

In February last, I was asked by Professor MacLagan to see with him the Rev. Mr. C., who was seventy-six years of age. The history of our patient was that, about five years before our visit, he noticed for the first time, during a fit of coughing, "a lump come out of his throat on to his tongue." When the coughing ceased, the tumour disappeared; but, after this, the growth constantly protruded from the throat whenever he coughed or was sick, so that he became quite accustomed to its appearance. The tumour never caused him any inconvenience, except by its protrusion; and, when it did not pass back into the throat spontaneously, he could easily return it by pushing it down with his fingers. During the last year, the protrusion was not so frequent; but the tumour had increased in size and length, and, when it did protrude, it could be drawn out through the mouth and examined. There was no interference with swallowing or with respiration.

Before visiting our patient, it was arranged that I should bring with me the necessary instruments, in case the removal of the tumour was decided upon; but a difficulty was encountered at the very commencement of our meeting, for the tumour declined to protrude, notwithstanding the administration of a strong emetic by my colleague in the case. A second dose of the emetic succeeded, and the growth showed itself, and was at once seized and drawn out of the mouth. When examined, it was found to be a fibrous polypus, measuring four inches in length and about one and a half in breadth, gradually tapering to its peduncle, which was fully two inches in length and about the thickness of an ordinary lead-pencil. On passing the finger along the peduncle, it was felt to be attached to the left side of the œsophageal tube, at a point immediately below the commencement of the canal. The tumour having been drawn out of the mouth to its full extent, and a gag inserted to keep the jaws separated, I passed round the peduncle the chain of an *écraseur*, and slowly divided it, as low down as possible. The peduncle was divided in this way about an inch from its attachment to the œsophageal wall, so that the whole length of the tumour removed was five inches.

The structure of the growth was fibrous, resembling in appearance that of the dense fibrous polypus which grows in connection with the nasal cavities and bases of the skull. Its external surface was covered by mucous membrane. There was a slight oozing of blood from the stump of the peduncle for a few hours after the operation; but this soon ceased, and the patient suffered no further inconvenience, and was able to return home in a fortnight.

Remarks.—Cases of polypus growing in this situation are rare, and therefore I have considered a note of my case worthy of record. The fact that the growth gave rise to no inconvenience, notwithstanding its size, is an interesting feature in the case. The operation was of the simplest nature, and requires no special reference.

Tracheotomy in Membranous Laryngitis.

At a late meeting of the Royal Medical and Chirurgical Society (*Lancet*, Nov. 30, 1878) Mr. ROBERT W. PARKER read a paper on tracheotomy in membranous laryngitis, the indications for its adoption, and some special points as regards its after-treatment.

The author began by expressing his regret that the surgeon is only too often called in after all therapeutic measures have failed, the more so, because these measures generally include the use of depressants, which if not at once beneficial greatly tend by their continued administration to increase the prostration, so often a predominant feature of the disease. He regards recession of the chest-wall as a more important indication for tracheotomy than a loud clanging cough, for in the most urgent cases voice and cough are all but abolished owing to implication of the vocal cords. He advocates the administration of chloroform previous to the operation, and has never seen any ill effects therefrom. The higher operation is preferred as the more easy, especially in children, and the use of a tracheal dilator is advocated in preference to the immediate introduction of the canula; in this manner the tracheal wound is kept open. Then the author advises, as a matter of routine in every case, that the trachea and glottis be thoroughly cleared of all foreign matters, whether membrane or mucus, before the introduction of the tube. For this purpose a feather is usually employed, but any other means may be adopted which the operator may prefer. The feather may be passed downwards towards the trachea and upwards into the larynx, and through the glottis. The presence, it was argued, of membrane or inspissated mucus in the larynx above the tube after tracheotomy, is often an unsuspected cause of reflex

irritation and cough; the surgeon, therefore, ought every now and then to clear out the larynx, so long as the patient is unable to do this for himself; and while he has to wear the canula in his trachea the patient is unable to use the natural means—viz., coughing—owing to the fact that all air is directed from the larynx through the tube. The author advocates the use of the largest-sized tube which can be got into the trachea without the employment of actual violence, and of the shortest that is consistent with safety, and he lays stress on the advantages of the tracheal part of the tube being freely movable. As regards the curve of the tube, it was stated that the outline should approximate to the Gothic rather than to the Roman arch; in other words, tubes made in the form of quarter circles (the usual forms are not recommended, for it can be shown that such tubes must almost necessarily impinge on the anterior wall of the trachea, and so produce mischief). He believes that a large proportion of the troubles which in past years have arisen from the use of "rigid" tubes has been caused by "ill-fitting" tubes. Speaking of Mr. Baker's "flexible tubes," the author is rather inclined to doubt the expediency of regarding "flexible" tubes as less likely to produce ulceration than "rigid" ones; for, unless the flexible tubes are made of a suitable curve, they will most probably lead to ulceration, just as certainly as (though, perhaps, less rapidly than) rigid tubes. The great indication for operation having been the presence of a mechanical impediment to respiration, so the chief object of the surgeon in the after-treatment must be to prevent its recurrence. The use of the feather has already been referred to. Another important aid is the employment of steam: the amount varies with the individual case, but an excess is in all cases to be avoided.¹ The less there is of tracheal secretion the more is steam needed, and the converse. Creasote, carbolic acid, benzoin, and other medicaments may be added in order to meet the requirements of various cases. The use of "solvents" is strongly recommended, the most important of these being soda. It may be used in solution (from ten to twenty grains in an ounce of water), and ought to be sprayed into the throat from time to time. It is thought to soften the membrane and to help its removal, and also to render its re-formation less possible. The author has seldom seen cases in which a fatal result could be traced to the operation itself; pneumonia and collapse being the commonest causes of death. The paper concludes thus: Bearing in mind that the operation is undertaken, not as a curative measure, but simply with a view to relieve a mechanical impediment to respiration; seeing, nevertheless, the great frequency with which, after tracheotomy, the trachea and larynx, on the post-mortem table, are found covered, not to say choked up, with membranous exudation (specimens of which may be found in almost every anatomical museum)—the author, as a practical outcome of his paper, and with a view to raise a definite issue for discussion, feels justified in enunciating the following dictum: The presence of membrane in the trachea, in a fatal case of membranous laryngitis after tracheotomy, must be regarded as evidence of the want of due care on the part of the surgeon in charge, just as much as would the presence of a piece of gut in the inguinal canal after herniotomy, or a calculus in the bladder after the operation of lithotomy.

Mr. HOLMES said that the author's suggestions were of great value, for he had, he confessed, always abstained as much as possible from irritating the trachea, lest its condition be aggravated; but he should now, after Mr. Parker's paper and Mr. Smith's testimony of the value of the practice, alter this procedure, and he

¹ The most useful apparatus for this purpose is the ventilating croup-kettle manufactured by Messrs. Allen & Sons, of Marylebone-lane. It supplies not only steam, but fresh and warmed air at the same time.

hoped with success. Certainly to have a mortality of eight out of seventeen cases of tracheotomy in membranous laryngitis was a death-rate wholly unfamiliar to surgeons, and should of itself lead to the general adoption of the lines of practice suggested in the paper. He did not think many surgeons used the flexible tubes, and in one case of tracheotomy for cancer of the larynx, in which the trachea was too sensitive for metal tubes, he had found that the flexible tube caused as much, if not more, irritation, and had to be discarded. For some time in this case he was obliged to have recourse to daily dilatation of the tracheal wound, but at length found that a metal tube, with rounded ends and a perforation at each side, could be borne. He could not see the necessity for having a tube the calibre of which should be larger than the chink of the glottis, nor did he think the length of the tube was of the importance Mr. Parker conceived it to be.

Dr. CHARLES WEST added a few remarks, because the greater part of Mr. Parker's experience had been gained at the Hospital for Sick Children during the time when he (Dr. West) had the happiness of being connected with that institution. He believed he had seen more tracheotomy operations than most surgeons, but he had stood by as a critic, and had probably, therefore, observed points which escaped the individual operator. In the whole course of his practice he never regretted having tracheotomy done; he had often regretted that it had not been sooner performed. Retraction of the soft parts during inspiration was the most trustworthy indication for its performance, and in every case he was accustomed to expose the abdomen and chest, and, according to the degree of this retraction, to draw conclusions as to the expediency, or not of having tracheotomy done. Mr. Parker's suggestions as to the operation were sound and wise, and he could bear out what he said about venous bleeding. Then as to the size of the tubes; he had seen evil result from the use of too small tubes, and he recollected hearing Trousseau in one of his clinical lectures illustrate this by instancing the difficulty of inhaling through a small tube as compared with one of larger calibre. He was struck to find that Mr. Parker had not mentioned how Trousseau was accustomed to swab out the trachea, holding it to be of considerable importance; and he also advocated dropping in solutions of carbonate of soda, and even nitrate of silver. He had seen what Mr. Parker described, a canula push aside false membrane in its introduction, showing the importance of clearing the trachea before the tube was introduced. He believed the tube with a movable collar was the invention of M. Roger, late physician to the Hôpital des Enfants Malades. Then he was sure that the chances of success in treatment were small without the aid of an exceedingly competent nurse. He could confirm the statement of the grave indication of a dry state of tube, and in any case where the inner tube is dry he advised moistening with water or solution of carbonate of soda. He doubted if tracheotomy was to blame for the pneumonia which so often complicated membranous laryngitis. He regretted that he had no longer opportunities of increasing his experience, so that he could speak as to the value of Mr. Baker's tubes, but he could conceive many cases in which they would be very advantageous. There could be no risk of oxidation of the metal tube if it were removed and cleansed as frequently as it ought to be. Dr. West concluded by stating that he was glad to bear testimony to the accuracy of Mr. Parker's statements and the soundness of his conclusions.

Recovery after Penetrating Wound of the Thorax and Hernia of the Lung.

The first of these cases is reported by Dr. SCHOLZ in the *Wiener Medicinische Presse*, No. 1, 1878. The patient was a soldier who was stabbed with a knife

on the left side of the chest, the wound being three centimetres (1.2 inches) long; from this protruded a piece of the lower lobe of the left lung, nineteen centimetres (7½ inches) long, five and a half centimetres (2.2 inches) broad, and three centimetres thick. It was impossible to reduce the hernia. On the third day, that portion of the lung which was protruding was a reddish-brown colour, with a consistency resembling that of liver; no fœtor emanated from the wound, but there was an absence of the rhythmical movements. As the hernia was acting only as a foreign body, it was decided to remove it. The edges of the thoracic wound were brought together, as far as possible, by means of a suture; a ligature was then placed round the base of the protruded portion, and its removal effected with a knife. Antiseptic precautions were taken during the operation. A considerable quantity of blood was lost at the time, but very little febrile reaction resulted from the operation. The bottom of the wound, formed by the spongy pulmonary tissue, slowly granulated. In two months and a half a cicatrix had formed, two centimetres long and five broad. This was firm to the touch, and moved synchronously with respiration. The patient was then sent back to his regiment.

The second patient was under the care of Dr. VOLKEL (*Berliner Klin. Wochenschrift*, November 7, 1878), having received a knife-wound below the eighth rib of the left side, in the axillary line. Directly after the accident, air freely entered the cavity of the chest through the wound; but gradually this became obstructed by a protusion of lung-substance. In the first instance, both hemorrhage and dyspnoea were very marked; these, however, both decreased as the hernia of the pulmonary tissues took place. When Dr. Volkel saw the patient, half an hour after the reception of the wound, there was great pallor, and a complaint of severe pain in the region of the wound; there were all the signs of a pneumo-thorax of the left side, and a prolapsed portion of the lung on the same side, which resisted every effort at reduction. The pulse was 80; respirations 40. Absolute rest was prescribed, and ice ordered to be applied to the hernia. On the third day the temperature had fallen, and the number of respirations had sunk to 27. The quantity of gas and liquid in the left pleural cavity had much diminished. As the ice was not appreciated by the patient, its use was stopped. The prolapsed portion of the lung gradually assumed a deeper colour and a firmer consistency, and exuberant granulations were developed on its surface; its volume slowly decreased, and in three weeks was about the size of a filbert. Cauterization with nitrate of silver reduced this still more, and in six weeks the hernia was only of the size of a leutit, flat, and covered by a thin membrane. A further application of the nitrate caused this to disappear, and the patient was dismissed cured.—*London Med. Record*, May 15, 1878.

On Catheterism in Cases of Stricture on Physiological Principles.

Mr. JOHN GAY, Senior Surgeon to the Great Northern Hospital, contributes to the *Lancet* (Nov. 16, 1878) a short but interesting paper on this subject. He says cases of stricture often come under the care of the surgeon, especially in hospital practice, in which, owing to the patient's neglect, a stricture barely permeable becomes almost suddenly impervious, and the surgeon is called upon to procure a passage of some kind for the urine in the teeth of every obstacle, normal and abnormal, that can waylay his efforts and render them difficult. It is to the earlier period in this (the culminating) stage of such a case that the following remarks are designed to apply.

A man, aged twenty-eight, recently presented himself at the Great Northern Hospital during my visit. He had suffered from stricture for years; had had

urethral discharge in abundance, and chronic balanitis as well. Latterly his urine had dribbled away, and, before reaching the hospital, this resource had failed him. Catheterism was attempted by skilled hands, but in vain; and as early relief was necessary, an operation was advised, but refused. On examination, he was found to have a hard, firm, and painful stricture about three inches from the orifice, for which I proceeded to use a catheter on the following principles:—

1. As it is, the urethra is absolutely impervious to the passage of the catheter from a combination of causes—viz., the stricture growth engorged with mucus and blood, and rendered painful by futile catheterism; and certainly spasm. It is not, however, absolutely impassable.

2. The tightest part of the stricture is that in front.

3. The unconditional use of a catheter would, in such a state of the parts, certainly intensify the difficulty by calling into play a new source of resistance, in the form of normal muscular antagonism, to its passage—a force that is ever on the alert to oppose the enforced passage of a foreign body through the urethra into the bladder.

4. This automatic force can be brought under complete control by an act of volition, and not only so, but be made to impart to the strictured canal the greatest amount of patency and passivity of which it is capable.

5. The means to this end consist in making the patient bring the sphincters or detrusors of the bladder and urethra into a state of absolute rest by voluntarily, but gradually, calling into powerful action their antagonists, the expulsors or accelerators, and using the catheter whilst the force thus elicited is kept in a state of strain.

6. This mode of palsyng the detrusors has another advantage which anæsthesia does not possess, since it assists the surgeon by employing the urine as a dilator, and thus reduces the resistance of the stricture slit.

In the case before us the method thus indicated was carried out as follows. The patient was made to stand, supported by assistants, upright against a firm support, with outstretched legs—a position I always insist upon in catheterization, if feasible,—and being prepared with a well-warmed and oiled silver catheter (No. 4, at a venture, in this case), he was called upon to make an effort to pass his water and to gradually increase it to the extent of his power, always under the impressed conviction that he will succeed. After straining thus for a few seconds, and being required to keep up the act until he had permission to relax it, the point of the instrument was gently insinuated into the urethra, and carried on to the stricture. By careful exploration I was soon satisfied that its point and the slight force I was using were in a line with the axis of the canal, and that the entrance of the stricture had been reached. This I *felt*, for I had contrived to slide the instrument along the floor of the passage to the furthest point I could reach in any part of the canal, and by the sense of a slight grip of its point which was given me on making a simple move of the instrument onwards, I was sure that the passage had been gained. The patient still keeping up the strain, with a very little more force the catheter passed through with the usual, not always assuring, jerk. It could not, however, be made to enter the bladder, for its course was interrupted by another stricture at the membranous part of the urethra. This I did not attempt to pass, being satisfied that if the instrument could be retained during the night, the remainder of the passage would be easily passed in the course of the morrow, for the catheter would now indirectly act as an expulsor, and therefore keep in check any renewal of action on the part of any counter-acting power. The urine passed abundantly during the succeeding night, not *through* the catheter—for it contained some clotted blood, and if it had not, I should have prevented it by the use of a close-fitting stilette,—but around it; and

on my visit the next day, the instrument was passed through with the help of the tip of my forefinger. A severe rigour followed the first effort, which was subdued by a glass of hot brandy-and-water and one scruple of quinine in the course of the next twenty-four hours.

The subsequent treatment has been daily catheterization, using a larger catheter each day, and allowing it to remain a few hours on each occasion. On the seventh day a No. 8 was easily passed. I need not refer to the watchful care which is always needed in the after-management of such cases.

I have ventured to ask permission to publish this case, trusting that the principle advocated—viz., that of pulling back upon physiological resources as a help in the treatment of severe cases of stricture—might meet with whatever attention it may be thought to deserve.

Removal of a Piece of Iron from the Bladder per Urethram.

Dr. DELEFOSSE reports that in June he was consulted by a coachman who had introduced a piece of iron into his bladder. There was a good deal of pain, and constant urination, this being augmented by a long walk taken to reach the surgeon's house. The patient was much depressed, and would not give much information about the foreign body, merely saying that the ends were not sharp, and that he had introduced it for the purpose of clearing the canal. He was placed in the recumbent position, and a curved metallic exploring sound was introduced into the bladder without difficulty, there being no contraction of its neck. A long smooth substance was then felt lying from left to right across the cavity of the organ, quite immovable. At first it was thought that extraction should be attempted through an opening made in the perineum, but finally a lithotrite was passed, and at the end of half an hour one of the ends of the iron was seized and the foreign body withdrawn; this proved to be an iron carriage-pin, slightly curved, 9 centimetres (about $3\frac{1}{2}$ inches) long, and with a diameter of 17 millimetres ($\frac{1}{8}$ ths of an inch). There was no bleeding, and the next day the man resumed his work none the worse for his mishap.—*London Med. Record*, Oct. 15, 1878.

Cystine Calculus.

M. GAUJOT describes a case of cystine calculus in the *Bulletin et Mémoires de la Société de Chirurgie*, Nov. 3, 1878. The patient was a man aged 25, who was admitted into the Val-de-Grace on May 30th, 1877. The first symptoms of stone appeared in 1876. The calculus was removed by the prerectal incision, and the patient recovered in five weeks. The stone weighed 25 grammes (387 grains); it was ovoid in shape, of yellow colour, and had a rugose surface. Its greatest diameter was 44 centimetres (about $1\frac{1}{2}$ inches). On section, it presented a homogeneous structure, without nucleus or strata; it was greasy to the touch, and friable. Analysis showed it to be composed of cystine, with traces of phosphate and sulphate of lime, mucus, and fatty matter.—*London Med. Record*, Nov. 15, 1878.

Dermoid Cyst of the Testicle.

Dr. MACEWEN reports, in the *Glasgow Medical Journal*, for October, the case of a boy, aged 15, who was admitted under his care in the Glasgow Royal Infirmary, June, 1877, suffering from a tumour on the right side of the scrotum. This had been noticed in the first instance shortly after birth, and had grown proportionately with the rest of the body. As a rule, no soreness was felt in the swelling, except once in every six or nine months, when it became painful, and,

according to the mother's account, at these times it seemed to increase in size. An examination showed that the tumour was ovoid, smooth externally, non-adherent to the skin over it, which was of a pinkish colour. To the hand it was heavy; in some places having a semi-fluctuant feeling; at other points, being quite hard. Its measurement was six inches, not quite reaching the external abdominal ring; the spermatic cord could be plainly felt between the upper extremity of the tumour and the ring. On the 18th of June the tumour was removed antiseptically by means of a longitudinal incision made from the external abdominal ring downwards for five inches. A structure, resembling tunica vaginalis, was adherent throughout to the growth and required separation. The spermatic cord was then found to run into the tumour; a ligature was accordingly placed round it to secure the spermatic vessels, and a division then effected.

The tumour was found to be composed of one large cyst and several smaller ones. The external membrane was fibrous and whitish in colour. Internally, there was a large quantity of gelatinous fluid, which, microscopically, was proved to contain granular corpuscles, and cells resembling leucocytes, but no spermatozoa. Bundles of hair were also found to exist, and in the walls of the cyst were masses of bone and cartilage, one of the pieces of the former bearing a resemblance to the foetal sphenoid, another to the superior maxilla.

The patient made a speedy recovery, and at the beginning of July was dismissed convalescent.—*London Med. Record*, Nov. 15, 1878.

Electro-Puncture in Aneurism of the Aorta.

DRS. DUJARDIN-BEAUMETZ and PROUST read a memoir (*Gaz. Hebdomadaire*, Sept. 6) at the recent meeting of the French Society for the Advancement of Science, in which they state that, as the result of the employment of electro-punctures in six cases of aneurism of the aorta, they are enabled to conclude that Ciniselli's procedure, as they have modified it, has become a simple operation unattended with danger, and constitutes an efficacious and rational mode of treatment. In one case described by Dr. Proust, the patient having died from hemorrhagic infiltration of the lungs, it became possible to show that a thick layer of fibrinous coagula existed in the portion of the aneurismal sac where the needles had been applied. This case showed that electro-puncture could be successfully practised in patients whose general condition was a very grave one: that the coagula was deposited at the point of application of the positive pole; and that M. Gaiffe's improved instruments should be employed. M. Teissier observed that several experiments which he had performed corroborated the above conclusions, for he had found sphacelus produced in the arterial wall at the point of application of the negative pole, while several accidents arose during the application. But the application of the positive pole never gave rise to any accident, so that Drs. Dujardin and Proust have good reason for modifying Ciniselli's procedure by employing only the positive pole as the active agent, applying the negative one to a moistened plate with a broad surface placed at a distant part of the body.—*Med. Times and Gaz.*, Sep. 28, 1878.

Aneurism of the Abdominal Aorta Successfully Treated by Position, in a period of recumbence of seven weeks.

MR. JOLLIFFE TUFNELL, Consulting Surgeon to the City of Dublin Hospital, records (*Dublin Journal of Med. Science*, Aug. 1878), the following interesting case:—

A. B., aged nineteen, a tall, delicate young man, who had recently suffered from primary and secondary symptoms, and been under a mercurial course, con-

sulted me, upon the 7th of April last, for "a painful beating in his belly." He was engaged in the victualling business, and the history which he gave of his case cannot, I think, be better detailed than in the words of the patient himself, as taken down at the time. He said: "Five weeks ago I was working in the shop when an explosion of gas took place in the cellar underneath, and I was blown up to the ceiling; I was stunned and a good deal hurt, but I went to work again after a day or two. A week after this I was shoving up a side of beef, a man being on a ladder to put a hook into the beef; I pushed up the beef as well as I was able, but it *came back upon me*, and I had to let it down again. I felt at the time greatly exhausted, and had to rest for a while; I then tried again, and at last, after a very great struggle, got up the side of beef upon the hook. I did not feel any great pain then, but I was quite faint and very tired. Some days after, as I was going to work, I felt a great pain in my stomach, and a shivering came over me; I worked on, however, for a fortnight after this, until I was unable any longer to bear the pain. I now noticed the beating in my belly, and a throbbing, and it became very sore to the touch."

Upon examination of the abdomen, pulsation was evident to the eye, to the left of the median line, mid-distance between the umbilicus and cartilage of the ribs on the left side. Upon placing the patient on his back, a tumour, circular in form, with a distensile pulsation of two inches in each direction, could be almost grasped. The pulsation was accompanied by *bruit de souffle*, audible both to the unaided ear and by the stethoscope when the patient was recumbent, but the bruit was totally lost as soon as he stood erect. Dr. Gordon, President of the King and Queen's College of Physicians, saw him, in consultation, a day or two afterwards, and the condition at that date was precisely the same as on the 7th; the patient, in the meanwhile, having been kept quietly in bed. Regular recumbence was not, however, commenced until the 12th of April, by which date a water-bed had been procured, and it was now continued without the patient once moving from the horizontal position till the 26th of May, when he was allowed to sit up, and upon the first of June to go out for a drive, which he continued to do daily.

No medicine of any kind was taken during the period of recumbence, and the only medicament employed was a turpentine and assafoetida enema administered upon the 30th of April, which brought away a very large number of scybala, whose collection and retention in the abdomen were causing uneasiness to the patient.

The pain, so severe at first, and which was dependent upon the tension of the aneurismal sac, subsided very rapidly—indeed in a few days after lying horizontal. The sacrum never had the slightest blush or uneasiness from pressure in lying, flotation upon water entirely obviating both. Upon the 9th of June the patient went out of town for change of air, but came in again upon the 14th for examination. No bruit or dilating tumour could now be found—upon the most careful auscultation and manipulation—by either Dr. Gordon or myself, and no aortic symptom beyond a fulness at the spot where the aneurism had existed. The origin of the aneurism I attribute to the intense strain put upon the coats of the aorta when endeavouring to push up the side of beef, the spine being then strongly bent backwards, and in the most favourable position to cause a tear of the inner and middle layers of the vessel, and I do not refer it in any way to the contusions following upon the explosion of gas.

Treatment of Wounds of the Superficial Palmar Arch by Acupressure.

Mr. EDWARD BELLAMY, Surgeon to the Charing-Cross Hospital, contributes to the *Lancet* (Sept. 21, 1878) a short article on this subject. He says: A

perusal of the various English works on surgery does not impress me that this simple method is practised as frequently as it might be. I record a case which occurred lately in my own practice. A lad, whilst cutting some toffee from a plate, cut his ulnar artery through, just at the point where it takes its bend towards the radial side of the palm (in the "line of fate"), and when brought to my house, was losing blood rapidly, per saltum, from a deep wound about an inch and a half long. I applied Esmarch's bandage, and endeavoured to find the bleeding points, but to no purpose. I then plugged the wound and bound the hand to a dorsal splint firmly, so as to get pressure on the vessel by means of the tension of the palmar fascia, and applied compresses over the trunks of the radial and ulnar vessels. He soon returned to me bleeding as profusely as before. I then determined on acupressure, and taking a stout harelip-pin, passed it through the tissues about half an inch from the edge of the cut, under the artery, and out again to a corresponding distance the other side of the wound, and placed the limb again on the splint. This had the effect of entirely stopping the bleeding; the needle was removed on the fourth day, and the entire wound had closed by the end of the week.

I am well aware of cases of a like nature being treated by passing a harelip-pin under the radial and ulnar at the wrist, but although it has been effectual, it is not without its dangers, and I contend that in cases of wound of the superficial palmar arch (and this is not the first I have treated similarly), acupressure at the point of injury should be resorted to at once.

As a matter of anatomical fact, the bloodvessels, as it were, cleave to the palmar fascia, even after a long escape of blood; and, with ordinary anatomical precision, and a knowledge of the possible contingencies of irregularities, should be secured. A double needle might be used in some cases, to make quite sure—one on either side of the division in the vessel.

I need hardly say that these few remarks apply more particularly to wounds involving the superficial arch, although the "deep" arch is topographically not so deep or so ungetatable by this method as might be imagined.

Case of Ununited Fracture, in the treatment of which a Portion of Dog's Bone was used as a Means of Procuring Union.

Very various plans of treatment have been adopted for the purpose of getting the fractured bone to solidify. The method used in the following case, recorded by Dr. ALEXANDER PATTERSON, Surgeon to the Western Infirmary, Glasgow (*Lancet*, Oct. 19, 1878), is probably novel in this country, although a somewhat similar practice has been tried unsuccessfully in China.

D. M—, a marine engineer, whilst at sea, on Jan. 3d, 1873, sustained a simple fracture of both bones of the left forearm, about an inch and a half above the wrist-joint caused by his having been driven by a heavy sea against a lifeboat. The arm was put up in splints and kept up for some weeks. On the removal of the apparatus it was found that the bones had not united. He did not reach land for eight months after the accident.

Patient, aged forty-three, and in good health, was admitted to Glasgow Royal Infirmary on Oct. 7th, 1873, nine months after the receipt of the injury. Immediately after admission subcutaneous section of the flexible uniting medium was performed by the gentleman in whose wards he lay, and the arm was put up in splints for three weeks, but as union did not seem to be taking place, incisions were made along the radius and ulna, and the bones resected. The arm was again put up, and matters were progressing favourably, when, at the end of four weeks, erysipelas set in, and during its course necrosis of about three-quarters of

an inch of the radius occurred. The limb was again put in splints and retained so for six weeks longer, when the external wounds were healed, but the bones had not united. Patient then left the hospital, having been in the house for three months and a half.

Aug. 15, 1874.—The man was readmitted to-day for the purpose of having his arm amputated. In the absence of the regular surgeon I took charge of the case, and, a consultation having been called, amputation was unanimously recommended; at the same time permission was accorded me to make any possible attempt at saving the limb. On examination, the cicatrices of the former operations were seen lying on the inner and outer side of the false joint. The hand and lower fragments were drawn somewhat up towards the elbow, and hung swinging about, completely powerless. The lower end of the longer fragment of the ulna formed a hard, smooth projection, over which the skin was tensely drawn.

After having given the case some consideration, on the 14th of September the patient was taken into the theatre and placed under the influence of chloroform, while at the same time a retriever dog was being anæsthetised. I made an incision along the ulnar side of the arm, cutting down upon the ends of the fractured bone, and removing the fibrous band which alone formed the bond of union; the rounded points were removed by the saw, and a hole drilled obliquely through each squared end. The same process was repeated on the radial side, when it was found that an interspace of about three-quarters of an inch existed between the two fragments of the radius. In the meantime, Mr. Andrews, one of the senior students, and a very clever manipulator, had exposed the humerus of the quadruped, completely denuded of every tissue except the periosteum. The length of bone was accurately measured (three-quarters of an inch), while from half an inch beyond the end of the necessary length the periosteal covering was rapidly but carefully dissected, the bone sawn through, a hole drilled in either end obliquely, as in the radius and ulna, and at once placed between the ends of the radius, where it fitted accurately. Wires having been passed through the holes, the bones were firmly tied together, the loose half-inch margin of the periosteum of the foreign bone being carefully spread over the periosteum of the radius. The wound was stitched with silver wire, the bone sutures coming out at each end of the incision. Wires were passed through the ulna, tied together, and the wound treated in a similar manner. The entire operation was conducted under the carbolic acid spray. The arm was put up in gauze, and held in two rectangular splints.

Sept. 15th. Patient complains of some pain in arm, but says he had snatches of sleep through the night after having had twenty-five minims of tincture of opium. After the operation there was a slight tendency to sickness, which was relieved by ice. Pulse 80, rather hard; tongue slightly furred, but moist; skin somewhat hot. Dressed; one or two of the stitches removed, as there were signs of tension and a slight blush around the sutures. To have tincture of opium as before. It is needless to give a detailed account of the dressings up till Nov. 3d, when the ulna was found to be firmly united; but on the radial side small pouting granulations appeared, as if a foreign body were present, which, however, could not be detected by the probe.

Nov. 28. To-day the patient was put under chloroform, and the wires removed. That which had tied together the ulnar fragments was first caught with forceps, and taken out with great ease; it had apparently cut its way through the bone, and was lying immediately beneath the skin. I then went at the radial side with extreme curiosity and anxiety. Over the seat of fracture a small, elongated patch of extremely soft granulations was seated. At one end of the patch, the

upper, one wire was caught, and easily extracted; the other was found at the lower end, and a considerable amount of force was necessary for its withdrawal. Although the wire came away complete, it seemed to have been broken in the bone by the force exerted in extraction. With my finger-nail I scraped off the exuberant granulations, and with a probe examined the wound. Dead bone could not be detected, although the appearance of the small wound led me to suspect its presence. The fracture looked, on the whole, to be fairly united, and the patient was dismissed, with strict orders to return weekly for dressing and examination.

Thirteen weeks have elapsed since the date of operation, and the wires were perfectly bright on removal, the wounds having been kept antiseptic throughout. The man has gained in weight, and improved much in appearance. On leaving hospital boracic lint was used as dressing. The small wound remained open for twelve months, when the dog's bone, reduced to about half its size, came away, after which the wound healed completely. The radius appears to have fallen in somewhat towards the ulna, leaving a slight deformity.

D. M——, wearing a leathern support around the forearm, resumed his former occupation, at which he is still engaged. He called on me some weeks ago, and remains in perfect health, and retains a very useful arm. Thinking of Ollier's experiments with the periosteum, of the transplantation of skin from an amputated limb to ulcers, and of the transference of the mucous membrane of the rabbit to the human eye, I had some hope that the strange bone might have found a new home for itself in the human arm; failing which I knew it would secure perfect alignment of, and steadiness in, the ulnar fragments. Should a similar case occur again, I should adopt the same process, still hoping that the two bones might become one.

Effusion of Oil after Fracture.

M. F. TERRIER reports (*Revue Mensuelle*, No. 7, 1878) a case in which, two months after fracture of both bones of the right leg in a male, aged 28, and when the fragments had been firmly united, a small fluctuating and painless swelling was observed on the inner surface of the limb near the seat of injury. From this, when punctured, three grammes were drawn off of a thick fluid resembling olive oil, which contained no anatomical elements, and was found on chemical examination to be composed of margarine, a small proportion of oleine, and some traces of cholesterine. After repeated puncturing of this tumour, and application of firm pressure to its thick cyst-walls, all further effusion, towards the end of the eleventh week from the date of the first appearance, was quite arrested.

In some remarks on the pathology of this condition, M. Terrier states that it has been made out by those surgeons who have written on this subject that traumatic oily effusions, or rather traumatic effusions containing oil-globules, may be either primary or secondary. The effusion when primary, is usually the result of rupture of the adipose vesicles of the subcutaneous cellular tissue. The tumour in such cases contains a serous fluid, more or less viscous, sometimes coloured by blood, and always mixed with oil-globules. A case, however, in which the primary traumatic effusion consisted almost wholly of oily fluid, has been reported by Gosselin. A young man presented, as the primary results of a fall, these three lesions, swelling of the left knee from intra-articular effusions, abrasions on the inner surface of the injured limb, and finally a small fluctuating tumour on the outer surface of the swollen knee. This tumour contained a thick fluid, which stained paper, and presented under the microscope very fine crystals of margaric acid. This oily effusion was very probably the result of crashing of adipose cel-

lular tissue. Consecutive effusion of oil after injury may result either from gangrene of the cellular tissue, or from osseous suppuration. It was pointed out by M. Chassaignac that oil-globules are specially observed in the pus that results from inflammation of bone, and, according to this surgeon, the presence of such globules in purulent fluid is pathognomonic of osteo-myelitis. In M. Terrier's case, the situation of the collection of oil on the inner surface of the tibia at the junction of its upper and its two lower thirds, that is to say, in a region where the subcutaneous cellular tissue contains very little fat, seems to exclude any idea of crushing of the cellulo-fatty tissue as the cause of the tumour. Neither can it be attributed to osteo-myelitis; since the fracture had been a simple one, and the inflammatory results of the injury very mild. It is necessary, therefore, to find out some other origin of this oily effusion. According to M. Terrier, the oil was derived from the bone marrow exposed by the fracture in the tibia, which, after passing between the fragments, collected under the skin, where instead of becoming absorbed as is usually the result with such effusions, it formed a cystic tumour. Gosselin, in treating of compound fracture of the leg, insists on this as a clinical fact, that the cutaneous wound gives passage not only to blood but also to oil-drops, the discharge of which may persist for ten or twelve days. This fluid comes from the bone-marrow exposed and broken down at the time of the injury, and in such case the abundance and persistence of the oil discharge serve to distinguish it from the discharge of a similar fluid that results from wounding of a part richly provided with adipose tissue. M. Terrier sums up as follows:

1. Effusion of oil may be observed as a result of breaking down of cellulo-fatty tissue, such collection being combined, in most instances, with a serous or sero-sanguineous effusion.
2. Gangrene of the cellular tissue and suppurative osteo-myelitis may give rise to purulent effusions containing oil-globules.
3. Pure oily effusions resulting from transudation of fat from bone-marrow may be the result of fracture, especially, perhaps, when this form of injury is multiple and direct.—*London Med. Record*, Oct. 15, 1878.

Dislocation of the Atlas.

Drs. UHDE, HAGEMANN, and BOETTGER describe in the *Archiv für Klin. Chirurgie*, vol. xxii, a case of bilateral wrench of the articular surfaces of the atlas, by which the right surface was displaced forward, the left backward, from the corresponding articular surfaces of the axis. The injury produced some remarkable disturbances of innervation. The left half of the tongue was paralyzed and convex outwards, while the right half was contracted and concave. The left half of the soft palate and the left glosso-palatine arch were also paralyzed; the uvula was drawn to the right. The anterior third of the tongue on both sides, and the second and third thirds on the left, possessed ordinary and gustatory sensation; in the posterior two-thirds on the right, no sign of sensation or of taste could be detected. The authors attribute these phenomena to paralysis of the right glosso-pharyngeal nerve and of the left hypoglossal nerve and the pharyngeal plexus. By artificially producing the injury, they show that the glosso-pharyngeal nerve, immediately after its exit from the jugular foramen, must have been violently stretched over the portion of the atlas which was thrown forward; that, in this luxation, the roots of the hypoglossal nerve inside the vertebral canal appeared as a pair of tightly stretched cords, instead of lying, as in the normal condition, loose against the dura mater. In the same way and at the same part, the accessory nerve suffers stretching, leading to the paralysis of the left palate; this can be explained in no other way than by assuming an in-

jury, through this overstretching, of the pharyngeal plexus, which aids in forming the anterior branch of the accessory nerve. The vertebral canal was not so much narrowed as to produce compression of the medulla oblongata, and the vertebral artery was not injured. The disturbances of the gustatory function of the tongue indicates that the glosso-pharyngeal nerve supplies exclusively only the two posterior thirds of the tongue, and that the anterior third and the palate are supplied from portions of the third division of the fifth nerve. The dislocation could not be reduced; but the patient gradually regained some power of moving the head. There was also some improvement in the functions of the tongue and palate.—*British Med. Journal*, Sept. 7, 1878.

An interesting case of supposed luxation of the atlas is recorded in Von Langenbeck's *Archiv*. A bilateral dislocation of the atlas occurred in consequence of a fall, the right articulation being displaced forwards, and the left articulation backwards. The left half of the tongue was paralyzed, the right contracted into a curve, with the concavity outwards, whilst the left presented a convexity outwards. The left half of the palate and the left glosso-palatine arch were paralyzed, the uvula being curved to the right. Common sensibility and the sense of taste were present on the anterior third of the tongue on each side, and also on the left middle and posterior third, while on the right middle and posterior third no evidence of common or special sensibility could be obtained. The authors refer these symptoms to paralysis of the right glosso-pharyngeal nerve and the left hypoglossal nerve, and of the left pharyngeal plexus. They show, on a preparation on which the same dislocation was artificially produced, that (1) the glosso-pharyngeal nerve must have been tightly stretched over the portion of the atlas which was displaced forwards, immediately after its exit from the foramen-jugulare; that (2) the roots of the hypoglossal within the spinal canal appear like a pair of tightly-stretched threads, while they normally run slackly against the dura mater. In the same manner, and on the same side, the spinal accessory nerve becomes torn, to which the paralysis of the left half of the palate was probably due, since it can only be explained by supposing that the pharyngeal plexus, which the anterior twig of the spinal accessory nerve helps to form, suffered when the nerve-trunk was torn; (3) the narrowing of the spinal canal is not sufficient to cause a compression of the medulla oblongata. The vertebral artery would also escape. The disturbance of taste renders it probable that the glosso-pharyngeal nerve confers the sense of taste on the posterior two-thirds of the tongue only, and indicates the dependence of taste in the anterior third on the lingual branch of the fifth. The dislocation was not reduced, but the patient gradually obtained a freer movement of his head, and the paralysis of the tongue and palate also lessened.—*Lancet*, Sept. 21, 1878.

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Etiology of the Mechanical Symptoms of Hip-Joint Inflammation in Children.

Dr. KOLACZEK of Breslau contributes a paper on the above subject to the *Deutsche Medicinische Wochenschrift* for August 3d and 10th. He observes that the mechanical symptoms attending an affection so frequent as coxitis in children are by no means clearly explained. Even pathological anatomy has scarcely elucidated the mechanical symptomatology of this disease, probably not only because opportunity has been lacking to study it in its earlier stages, but also because the symptoms observable during life are mostly only functional. Two theories are even at the present day generally received: 1. The reflex or dynamic theory founded on analogy, according to which articular inflammation of every kind excites a reflex contraction of corresponding groups of muscles; and 2. The mechanical theory, on which the filling up of the articular cavity by the inflammatory exudation determines the displacement of the extremity. The view

already propounded by Brodie and Bonnet, seems to have been entirely overlooked, according to which the pathological positions assumed by the patient are due entirely to the instinctive effort on his part to place the limb in as easy and painless a position as possible. Dr. Kolaczek's own experience, during many years, of hip-joint affection in children, leads him to regard this theory of accommodation as the true and most natural one. He then enters at length into a discussion, from this point of view, of the mechanical symptoms as they arise during the progress of the case. The so-called voluntary limping, which is one of the earliest symptoms of hip-joint disease, he attributes to the desire of the child to shorten as much as possible the period, while walking, during which the weight of the body is thrown upon the affected joint. This halting gait is at first assumed only after the child has been moving about for some hours, since the pressure on the articular surfaces of the joint does not at first excite pain. As the disease progresses, however, the symptoms become more complicated, for the joint becomes more sensitive, and hence further efforts to escape pain. While standing, the affected limb assumes a position of flexion of the hip- and knee-joints, the foot being placed on tiptoe; there is abduction and rotation outwards; the anterior superior spinous process on the diseased side of the pelvis is depressed and advanced, and the lumbar portion of the spinal column is curved forwards and laterally; and this curvature is compensated by a curving backwards of the dorsal portion of the column, with depression of the shoulder on the side affected. These changes are produced instinctively on the part of the child, in order to remove the central line of gravity as far as possible from the diseased joint. This central line of gravity, which, during progression, oscillates between the two hip-joints, is frequently also thrown forward beyond the plain of the pelvis by the child fixing the stretched arms on the knees and so assuming a bending forward position, both in standing and walking; and by abduction of the limb this line is also thrown outwards. Nor is the assumption justified by observation and fact, that the inflammatory process in the joint excites a reflex contraction of the muscles. For, were this indeed so, it would be impossible to understand those by no means uncommon exceptional cases, in which, with undoubted inflammatory disease of the hip-joint, the pathological position is yet almost or wholly absent. But in such cases there is probably much diminished sensibility to pain, which is therefore only slight and more easily borne. The continued contraction of not only the muscles, but also the fasciæ, notably of the fascia lata and its descending processes, has a great tendency to become permanent, so that the displacement of the limb continues even when the recumbent posture is assumed. As the disease progresses and the patient takes to his bed, a further change occurs in the position of the affected extremity. The flexion at the hip-joint increases, and the limb is now adducted and rotated inwards. This change of position is due wholly to its greater convenience. For, in the horizontal position, the weight of the body is entirely taken off the hip-joint, and the thigh is flexed in order to reduce the antagonistic muscles to a state of rest; and since the patient naturally lies on the sound side, the affected limb is rested on the sound one. While, in the former stage, the limb is sometimes somewhat lengthened, it is now generally decidedly shortened, owing to atrophy of the head of the femur, and deepening of the acetabulum, and also sometimes, though rarely, to actual dislocation of the femur, through relaxation, atrophy, or rupture of the inclosing ligamentous structures. It is impossible to reconcile this change of position in the later stages of the disease with either of the former hypotheses mentioned; for the group of muscles contracted at the commencement by reflex irritation could not now permit the limb to be placed in a position so opposed to their line of action; nor, on the other hand, can the change in question be due in

all cases to destructive dislocation, of which there is only rarely any evidence. And the point of view from which we regard the displacements of the limb in coxitis, is of great importance in the treatment. For, whereas on the former hypotheses the limb will be invariably displaced in the same manner, whatever the position of the body; the practitioner, acting on the accommodation theory, will endeavour to adapt the position of the body so that the limb may obtain the greatest possible amount of ease and rest. And, hence, position and mechanical means are most efficacious in the treatment of inflammatory disease of the hip-joint.—*London Med. Record*, Nov. 15, 1878.

Repeated Fracture of the Patella.

The first case is reported in the *Progrès Médical* for September 21st, the patient being a woman, aged 56, who was admitted into the *Hôpital Cochin* under the care of M. DESPRES. An examination of the left knee-joint, made at the hospital six hours after the woman had fallen, showed that the patella was divided into three pieces. The middle fragment was separated from the upper one by a centimetre (0.4 inch), from the lower one by three centimetres (1.2 inches), this last piece being very movable. It transpired that three years before the patient had fractured the same patella transversely, and had been an inmate of the *Hôtel-Dieu*; fibrous union of the fragments had resulted. The case was treated by means of silicated bandages, and in three months the patient was able to walk with the affected limb as well as with the sound one, without fatigue, fibrous union having taken place.

M. Despres enunciates the following. 1. The formation of osseous callus in fractures of the patella is impossible when the articulation is distended by a large effusion, or if the pre-existing adhesions do not maintain the fragments in perfect contact in a limited effusion. This opinion, maintained by M. Guyon, finds a new proof. At the beginning of the year a patient was under observation who had sustained a fracture of the left patella. He was treated by a silicate bandage in the extended position, and osseous union was effected. Before the accident, the man had suffered from suppuration in the peri-articular tissues, following an affection of the bone. As a consequence of this, the patella was firmly bound to the condyles by strong fibrous adhesions. In this case also, atrophy of the muscles of the thigh caused the absence of one of the principal causes of separation of the fragments. 2. The formation of fibrous callus may be considered as the definite mode of healing of fractures of the patella; for, in the case reported, after the second fracture, as after the first, the patient could walk without fatigue and without limping, there being no difference in the movements of the two limbs. So again, the fibrous callus resisted more than the bone itself, as is evidenced by the second fracture. What use is there in endeavouring to obtain osseous callus when the fibrous is stronger than the bony? It is to be believed that the formation of an osseous callus is difficult to obtain, and is more desirable than a short, solid fibrous material, the development of which depends on the treatment employed.

The second case appears in *Le Progrès Médical* for October 19. The patient was 50 years of age, and three years ago he fractured his left patella. Six months after the same accident happened to the right. Union in both fractures was by fibrous callus three centimetres (1.2 inches) long. The articulation was very loose and walking was difficult. Eighteen months after the second breakage, the patient while in his garden tripped and fell. On being examined, it was found that the lower fragment of the right patella was broken transversely; the pieces being divided by about a finger's breadth. The fibrous callus which marked the line of ancient fracture had not stirred. An immovable apparatus was applied, and fibrous union

resulted; but the patient had afterwards great difficulty in walking and also in raising his leg from the ground; going down stairs was especially laborious.—*London Med. Record*, Nov. 15, 1878.

Midwifery and Gynæcology.

Rupture of the Vagina during Labour.

At a late meeting of the Obstetrical Society of London Dr. GALABIN related (*Lancet*, Nov. 23, 1878) two cases of rupture of the vagina during labour. The first was that of a patient under the care of Mr. Sharman, of Gipsy-hill, an enormously fat woman. She had had eight children previously. During labour the patient had got out of bed and strained violently upon a night-stool. Immediately afterwards the head was found to have descended to the perineum, and was quickly expelled through the vulva. Uterine action then ceased, and the fœtus was extracted alive. After twenty minutes, as expulsion of the placenta could not be otherwise procured, gentle traction was made upon the funis; but it broke and came away, leaving the placenta behind. On introduction of the hand a substance was felt, which, being carefully brought into view at the vulva, proved to be large intestine, recognized by its longitudinal bands. The placenta could not be found, though the arm was introduced up to the elbow. The author saw the patient about eight hours after the rupture, and found that the posterior vaginal wall had been torn away from the cervix for more than half its circumference. The os uteri was closed, and the placenta not to be discovered. It was thought that it would give the only possible chance to the patient to perform gastrotomy, sponge out the blood from the peritoneal cavity, and search for the placenta. A jet of dark blood spurted out at the first puncture of the peritoneum, and more than two pints were found collected in front of the uterus. The placenta was also lying in front of the uterus and upon the top of the bladder. Symptoms of peritonitis set in the next day, and death took place forty-two hours after delivery. The second case was that of a patient forty-one years old, who had had ten children delivered naturally. She was attended in the Guy's Charity. The author was called to see what was said to be a case of placenta prævia, in which considerable hemorrhage had taken place. He found that no presentation was within reach, and that the finger penetrated a long way without resistance. Chloroform being given, it was ascertained that there was an extensive rent in the posterior vaginal wall, separating it from the cervix. The fœtus and placenta had passed into the abdomen, the head of the fœtus uppermost. The posterior lip of the cervix, which was bilaterally cleft, and the peritoneal surface of the uterus, had been mistaken for the placenta presenting. As the patient and her friends, who were Irish, refused to allow gastrotomy, the foot of the fœtus was brought down through the vagina, but the occiput had to be perforated before the head could be brought through the brim, and the patient died shortly after delivery. In both cases the accident appeared to be due, not to any degeneration of uterine tissue, or any considerable disproportion between pelvis and fœtal head, or protraction of labour, but to a violent pain having occurred while the uterus was in a position of extreme anteversion, so that the fœtal head was driven against the posterior wall of the genital passage.

Dr. BARNES considered the cases important, as showing that spontaneous rupture of the vagina may occur during labour. Had forceps been employed in

either of these cases the practitioner would probably have been blamed for the result, and the laceration have been attributed to his manipulation. In fat women the tissues give way under slight forces. Cases of ruptured vagina occur suddenly in morbid tissues, and before there is any indication on which to act.—Dr. CLEVELAND referred to a practical point in the first case, and suggested that it might prove a useful warning under all circumstances to employ the utmost gentleness in attempting to bring down the placenta by traction on the funis. Although there was no evidence that undue force had been used, yet the fact remained, that had the cord not been unfortunately broken the placenta might have been cautiously traced to its resting-place, and removed without the operation.—Dr. MATTHEWS DUNCAN related the particulars of two cases of ruptured vagina, and remarked that when the great majority of such ruptures takes place the cervix and vagina form one tube, whose parts are distinguished chiefly by the rim of external os projecting. The vagina might rupture or the cervix might rupture, but the body did not. Vaginal ruptures are not rare, forming about a third of the whole.

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On the Prevention of the Spread of Puerperal Fever.

A committee of the Society for Obstetrics and Gynæcology in Berlin, of which Dr. C. Schröder is Chairman, have presented a report on this subject to the Prussian Minister of Public Health (*Edinburgh Med. Journ.*, Nov. 1878), from which we make the following extract:—

Under the names “puerperal fever,” “malignant childbed fever,” are included a group of diseases occurring in childbed which vary very greatly in their manifestations, but have this in common, that they are called into being by the absorption from the organs of generation of a material which gives rise to destructive inflammation and fever. There are, indeed, a number of substances, mainly composed of organic materials in a state of putrid decomposition, which, when brought into contact with an open wound, set up inflammation in it, which extends to the neighbouring tissues; a further absorption by the lymphatics and blood-vessels leads to more extensive inflammation among neighbouring and remote organs; and when a large quantity is rapidly absorbed into the blood, a quickly fatal poisoning of the whole organism occurs. To surgeons the deadly effect of these materials upon wounds is only too well known, and the greatest advance, probably, which surgery has ever made consists in the so-called antiseptic method of treating wounds—that is, in the scrupulously exact removal of such materials from fresh wounds.

Puerperal fever is indeed nothing else than the infecting of fresh wounds, such as are found in every newly-delivered woman, with these destructive septic materials. Almost every woman after labour has small wounds on the external genital organs, which are caused by the passage of the child through this narrow opening, and in every newly-delivered woman the inner surface of the uterus, from which the protecting membrane has been cast off with the ovum, presents a large wound surface. Thus, every newly-delivered woman is liable to suffer from the dreaded infective wound diseases—which in persons wounded under other circumstances are called pyæmia, septicæmia, wound fever, blood-poisoning, purulent infection, etc.—*so soon as suitable septic materials are brought into contact with the genital organs.*

Now, materials of this sort gain admission in two ways: first, and this happens more especially in very difficult and long labours, under the influence of the particles that cause putrefaction which are ever present in the air and ever ready to press in, decomposition occurs in the mother's own secretions and excretions, and thus takes its rise in the maternal organism itself; or, secondly, these mate-

rials are introduced into the female genital canal *from outside*. This latter is brought about almost exclusively by the finger or instruments of those who examine the lying-in woman—that is to say, of the midwife or the physician.

If the instruments or finger of these persons have not been cleaned with the greatest care, and disinfected most conscientiously after they have been in contact with any infective matters, the result is that these matters are brought into contact with the fresh wounds of the woman during labour or subsequently, and thereby infect her with a fatal disease. A specially frequent channel of infection is from a diseased lying-in woman to another, because midwives quite commonly go from a diseased lying-in woman, whom they are nursing, to attend upon a new confinement, without sufficiently purifying themselves; and it cannot be doubted that, in the majority of cases, the midwives are the carriers of this infection, because to their exclusive care the great majority of labours is intrusted, and they naturally come into more intimate relations with the lying-in women than the physicians, who, in very many cases, are only called in after the onset of threatening symptoms.

From the foregoing exposition it will be seen that we know the cause of puerperal fever, and the manner in which it is brought about, more accurately than in almost any other disease, and, on the strength of this knowledge, have to ask ourselves the question: By what regulations can the occurrence and spread of puerperal fever be prevented, or at least lessened in amount?

These regulations naturally divide themselves into those which aim at preventing the occurrence of individual sporadic cases of puerperal fever, and those whose object is to avoid the transmissions of the disease from infected lying-in women to healthy ones.

As regards the first object, it is obviously of great importance to avoid the putrid decomposition of the discharges which come from the woman during labour. This is, of course, the aim of a rational management of a case of labour, which would, if possible, bring the labour to a conclusion before any stinking excretions come from the genital parts; we work in the same direction by keeping away anything which can excite putrefaction. The midwife should, accordingly, remember that frequent and careless examinations hasten the decomposition of the secretions, and should be instructed to use *disinfectant injections* in all cases of prolonged labour, so that the products of decomposition may be formed in the female genital passages as late, and in as small quantity, as possible. Of still greater moment is it that the medical persons (*Medicinal-personen*) to whom is entrusted the care and treatment of the lying-in woman, should recognize to its fullest extent the danger which threatens women, where putrid substances are brought into contact with the sexual parts either by the finger or by instruments. Among physicians this danger has long been known, and is universally recognized; but midwives cannot be too earnestly and strongly warned of it. That the rising generation of midwives may be properly instructed in this matter, it will require even more careful attention in the new additions of the handbooks for midwives, and in oral instruction, than it has hitherto met with.

Indeed, since it may be long ere all midwives are thoroughly instructed on this subject, the question arises, Whether it would not be the wiser plan to appeal directly to the public in this matter, and to enjoin upon husbands not to allow their wives to be examined by any hand which has not previously been thoroughly disinfected?

When we reach this point, when it is the universal custom, *in every single case, and under all circumstances, for the physician and midwife to disinfect their hands before they introduce them into the genital organs*, then, without any doubt, the annual mortality in childbed will become very much less, and thou-

sands of women, who now die of infection brought about by thoughtlessness or ignorance, will be saved.

It remains to speak of special rules for those cases in which puerperal fever has already broken out, because the danger of transmission of the disease then becomes more considerable, and experience teaches us that, where definite epidemics of puerperal fever occur, *they cling for the most part to the practice of a single midwife*. A large number of instances are on record in which a midwife has carried the infecting material from one diseased lying-in woman to others, with the result that a number of newly-delivered women have sickened, and many of them have died.

In order to cut short these definite epidemics when they arise, and to prevent them from breaking out, it appears absolutely necessary *to lay upon all medical persons* (Medicinal-personen) *by law the duty of reporting such cases to the Sanitary Boards*. The simplest way of effecting this is to include puerperal fever among the contagious diseases, of which it is necessary to send in a report. Undoubtedly special difficulties present themselves in regard to diagnosis. The question whether a disease during lying-in is to be looked upon as an infectious childbed fever or not, may be a very difficult one even for the physician, and is entirely beyond the judgment of a midwife. Accordingly, we hold it to be the bounden duty of midwife and physician to make a report to the sanitary authorities, *in every case of severe feverish disease occurring in childbed, unless it be clearly established that it has no connection with the puerperal process*.

But since even here differences of opinion may arise, there is one thing, at all events, about which there can be no doubt, namely death; we therefore deem it necessary to add, *that all midwives are in duty bound to give notice of every fatal case during childbed which occurs in their practice*. The sanitary authorities will probably in this way get sufficiently early notice of the existence of puerperal fever epidemics.

But if they are to be in the position effectually and certainly to cut short commencing epidemics, *they must have the power to suspend the midwife from the practice of her calling for a fixed period*, since this is the only sure means of preventing the extension of the disease through the same midwife.

We are thoroughly convinced, especially when we consider how wonderfully the mortality from smallpox has decreased since the carrying out of compulsory vaccination, that these rules will have a decided influence in lessening the mortality from puerperal fever; and, although we are far from believing that puerperal fever can in this way be rooted out, and though we do not for a moment doubt that, even under the strictest laws and with the most scrupulous care on the part of medical persons, sporadic cases of puerperal fever will always occur yet we must express a confident hope that, by the carrying out of the regulations sketched above, the mortality from puerperal fever will be very materially diminished, and that in this way every year several thousands of young mothers, who now die, may be saved to their families and to the State.

On Nervous Troubles Accompanying Uterine Affections.

MARTINEAU (*Gazette des Hôpitaux*, 1878, No. 64) says that in the majority of cases the morbid conditions resulting from uterine disease are due to disturbances of the nervous system. Among the most notable are neuralgia supra-orbitalis, maxillaris, and laryngo-bronchialis (uterine cough); also neuroses of the heart, causing painful palpitations, and spasmodic contractions of the bladder and bronchi (uterine asthma). All these symptoms become aggravated at the time of the commencement of the menstrual flow. The author observed one

patient affected with this kind of asthma, who had long passed the climacteric, but whose asthmatic attacks were always most severe at the times at which the menses used to appear. Ordinary asthma also becomes worse under the influence of uterine disease.

Uterine affections frequently give rise to spasm of various muscles and to paralysis of one or both lower limbs. Both of these conditions usually come on very gradually, and they never become complete.

The peripheral reflex irritation caused by uterine diseases often acts, in conjunction with other causes (*e. g.*, hereditary taint, defective nutrition, domestic trouble, etc.), in giving rise to mental disease.—*London Med. Record*, Nov. 15, 1878.

Hæmophilia or the Hemorrhagic Diathesis in Relation to Gynæcology.

The relation of hæmophilia, or the hemorrhagic diathesis, to gynæcology, is the subject of an article by Dr. E. BORNER, *docent* in the University of Gratz, published in the *Wiener Medicinische Wochenschrift* for August 17 and 31, September 7, 14, and 21. He refers also to an essay on the same subject, published by Kehrer in the *Archiv für Gynäkologie*, Band x.

After some preliminary remarks, Dr. Börner relates the case of a lady, Frau R., aged 52, who consulted him early last year on account of obstinate hemorrhage from the genital organs, and general weakness. She said that she had frequently suffered from great losses of blood, especially during labour. The introduction of the speculum was always attended with more or less hemorrhage. On making a very careful examination, Dr. Börner detected the blood oozing from the surface of the vaginal mucous membrane, as soon as the speculum came into contact with it; and on once slowly introducing an uterine sound, bleeding took place from the os uteri. Hemorrhage was also induced by simply applying the finger to the vaginal mucous membrane, and moving it to and fro.

A complete family history extending back beyond her parents could not be obtained, as she had left her native place at an early age. Her maternal grandmother and two of her mother's sisters died at an early age from some unknown cause. Frau R. had one brother and two sisters, one older and the other younger than herself. The brother had chest-disease, but was not a bleeder. The eldest sister was of healthy appearance when young, but after her marriage became pale, emaciated, and weak. Nothing special was known regarding her menses and confinements, but on one occasion she appears to have complained to Frau R. of having suffered from continuous and obstinate hemorrhage from the genital organs. She died, apparently of phthisis, at the age of 51. Of her five children, two died young; of the remaining three, two (a son and daughter) were healthy. The third (a son) was always ailing from an affection of the lungs. The youngest of the three sisters was also at first apparently healthy, but, after an early marriage, also became emaciated and pale. Nothing is known regarding her menses, but labour was always attended with dangerous flooding. Her husband also once stated that she daily had small discharges of blood from the genital organs. She died at the age of 32, of hemorrhage from the genitals, three months after an abortion which was accompanied by frightful bleeding. Her eight children—one male and seven females—are healthy.

Frau R. herself married at the age of 18, a month after the first appearance of the catamenia. She was weakly during childhood, but, after an attack of typhus at the age of 14, was in good health up to the time of her marriage. The act of coitus was from the first always attended with hemorrhage, which continued, though slightly, about twelve hours. She had no hemorrhage during any of her seven pregnancies, but the reverse was the case in her labours, regarding which

the following account is given: *First labour.* After severe *post-partum* hemorrhage, accompanied with several attacks of syncope, a great discharge of blood continued up to the fourteenth day, and did not entirely cease until the end of the second week. *Second labour.* There was severe hemorrhage for four weeks; and it ceased gradually at the end of the seventh week. *Third labour.* The patient was confined to bed for two months by continued loss of blood. *Fourth labour.* On account of continuous hemorrhage the christening of the child had to be put off for thirty weeks, and even then the mother could scarcely stand upright. *Fifth labour.* The patient had obstinate cough, with expectoration. She lay in bed three months, and bled nearly the whole time. *Sixth labour.* Rest in bed during two and a half months was necessary; the hemorrhage lasted six weeks. *Seventh labour.* The duration of the bleeding was six weeks. On each occasion remedies were tried, but apparently without effect. She suckled each of the first three children during twenty weeks. The application of the child to the breast was on each occasion followed by a discharge of blood from the genital organs, and the act of sucking was said to have also produced bleeding from the nipple. The menses reappeared generally in the fourth week after the cessation of the hemorrhage; they lasted three or four days, and were not extraordinarily profuse. It was also ascertained that she had been several times the subject of severe mental trouble, and that on each occasion there had been severe hemorrhage from the genital organs, which confined her to bed for some weeks.

The patient also presented other indications of the hemorrhagic diathesis. Dentition was attended with hemorrhage from the gums; so also was extraction of the teeth. For many years she had been subject to diarrhœa, which for the last eleven years had been attended with hemorrhage from the bowel. Pressure or a blow on the skin was always attended with ecchymosis. She had varices of both legs; and in rubbing one with her finger, in 1872, it burst, and gave rise to hemorrhage, which confined her to bed for three months.

Dr. Börner treated the patient by the introduction of cotton-wool, moistened with liquor ferri perchloridi, into the uterus, and washing the vagina with a very dilute solution of the perchloride. He also prescribed daily cold sitz-baths, and cold ablutions of the genital organs; iron and ergot were given internally, and a cooling diet and rest were ordered.

Regarding the patient's seven children, the following particulars were obtained. The first, a son, had good health, but was subject to severe epistaxis whenever he drank beer, and had very frequently also hemorrhage from the gums. The second, a son, suffered from rickets and hemorrhage from the skin; he died at the age of 5, after having vomited blood for four or five days. The third, a son, who is married and lives at a distance, is healthy, so far as is known. No disposition to bleeding was noticed during his childhood. The fourth, a son, aged 24, living in Gratz, suffered up to his sixth year from rickets; afterwards, he manifested a disposition to almost uncontrollable epistaxis, and to severe hemorrhage from the tongue, lips, and gums, on the slightest injury. The extraction of a tooth or a slight cut also gave rise to violent hemorrhage. The fifth, a girl, died suddenly at the age of 18. She is said to have been always pale and very liable to syncope. No disposition to bleeding was observed in her. The sixth, a girl, died in her seventh year from loss of blood. From a few days after birth she was the subject of numerous effusions of blood on the skin of the head, neck, back, and arms; commencing as small vesicles filled with blood, they burst, and caused exceedingly obstinate cutaneous hemorrhage. The seventh, a girl (now twelve years old) suffered when seven years old from swollen cervical glands, the spontaneous bursting of which was followed by tedious hemorrhage.

She had frequent epistaxis, and bleeding from the gums was easily caused. As yet, there was no sign of hemorrhage from the genital organs.

After some further comments, in which he examines Kehrer's statements, and compares them with his own observations, Dr. Börner sums up as follows:—

1. It may be assumed with great probability that hæmophilia occurs in the female sex more frequently than has hitherto been believed; and that more accurate observations on this subject will cause the relative proportion between males and females which has hitherto been accepted, to undergo in time a change unfavourable to the female sex.

2. The cause of the error which has hitherto probably prevailed with regard to the numerical frequency of hæmophilia in the female sex, appears to us to be, that in girls the diathesis often remains to a certain extent latent, and is frequently first brought into action by fixed causes apparently connected with the period of reproductive activity. (If this be so, it follows that many individuals, who die before this period of other diseases, escape observation on this point; and, on the other hand, that many of the manifestations of the hemorrhagic diathesis occurring in pregnancy and labour and in the lying-in period are not recognized as such, but, in ignorance of the peculiar individual condition of the patient in question, are regarded as some one or other of the already familiar anomalies of the period.) How often may not, indeed, hemorrhage in a hæmophilic puerperal woman have been quoted as the result of defective involution of the uterus, or fatal flooding simply as the result of atony of the womb?

3. Of the different modes in which hæmophilia is manifested in the female sex, several are of special interest to the gynæcologist. We call special attention to some of these in the subsequent paragraphs, but pass by the hemorrhages occurring in early childhood, some of which probably belong to this category, but regarding which there is still a controversy. We also omit the bleedings from the genital organs of female infants (on this subject see Kehrer's work, p. 203).

4. The catamenia of hæmophilic individuals appear not to be normal as regards quantity. Sometimes there is menorrhagia, sometimes vicarious menstruation.

5. As has been already stated in Section 2, the most momentous time for hæmophilic females appears to be the reproductive period, since some of the events occurring in this epoch are the principal causes of the manifestation of the diathesis grounded in the individual, and often not recognized until now. It is also peculiarly the period in which the disease carries off most victims.

6. Coitus may be attended with much more serious results in the hæmophilic than in the healthy individual. Not only, in consequence of the diathesis, may the act be followed each time with slight or most profuse hemorrhage, but there is also the possibility of fatal bleeding.

7. During pregnancy, profuse metrorrhagia may arise from the diseased state under consideration. Kehrer's statements regarding his cases place this beyond doubt. His explanation is, that "in this diathesis, pregnancy gives rise to and maintains changes in the nutrition of the vessels which lead to the occurrence of the hemorrhages;" of this we want more accurate proof, and in the mean time we explain the fact of hemorrhage at this point simply by the local conditions present in every pregnancy, which, when the hemorrhagic diathesis is present, may readily cause hemorrhages.

8. There is no special disposition to premature interruption of pregnancy in hæmophilic women.

9. As may be easily understood, abortion is accompanied with severe hemorrhage in hæmophilic females.

10. The period following delivery is one of great importance to hæmophilic women. Here hemorrhages most frequently occur, which bring the patients into

extreme danger, or even cause death. Or the hemorrhage during the lying-in period may be less remarkable for intensity than for excessive duration, and may cause great weakness to the patient, if it do not lead to fatal anæmia.

11. As regards lactation, not only may this be accompanied each time by bleeding from the genitals, but the nipples themselves may be the seat of considerable hemorrhage.

12. Fissures of the nipple, which occasionally occur at this time, although much too small to be the source of the hemorrhage in question, are remarkable for the obstinate resistance which they offer to attempts at healing them.

13. The catamenia of hæmophilic individuals when they return after the lying-in period has passed, are generally normal as regards quantity.

14. The climacteric period may set in with violent hemorrhages; and thus on the one hand the completion of this epoch may be considerably prolonged, or, on the other hand, the hemorrhages occurring during the period may in many cases lead directly to a fatal termination.

15. Certain hemorrhages from the genital organs of hæmophilic individuals are of interest, which arise from causes that, as a rule, do not produce such an effect in healthy persons. Thus (among mechanical causes) hemorrhage from the uterus may be caused by simple digital examination, by the introduction of the speculum, by the mere shaking caused by walking, or by the most careful introduction of the uterine sound. Among psychical causes—anxiety, vexation, fright, etc.—may be followed by prolonged and often for a long time irrepressible hemorrhage.

16. As regards the condition of the genital organs, it is, so to speak, normal in pure cases of hæmophilia, even when there is very abundant hemorrhage. Like the other mucous membranes of such individuals, the genital mucous membrane presents an apparently excessive fineness of structure, with tendency to serous infiltration, and here and there considerable congestion.

17. A specially successful treatment of the disease is not yet at our command, and we are limited to the remedies ordinarily used in the treatment of other hemorrhages. Kehrer recommends the induction of premature labour as a means of providing against the eventuality of severe flooding in hæmophilic women; but on this point further information seems to be required.—*London Med. Record*, Nov. 15, 1878.

Medical Jurisprudence and Toxicology.

Carbolic Acid Poisoning.

Carbolic acid is having a hard time of it just now. The daily papers lately opened their columns to the insinuations of those who declared that it is practically useless as a disinfectant for general purposes, and so dangerous a poison and corrosive that its use ought to be restricted by law. On the other hand, some surgeons are abusing their best friend, because by absorption from the neighbourhood of wounds dressed with it antiseptically, poisonous symptoms—vomiting, severe collapse, and the discharge of dirty, dark-green urine—occasionally ensue.

We are not much concerned with the outcry raised a short time back by Mr. Wanklyn, because the length of time during which carbolic acid has held its own as a disinfectant is a sufficient proof that it has a real value, without referring to the exact experiments which have been made by various reliable authorities on

this point. There is no doubt whatever that carbolic acid is a poison and a corrosive, but other substances in common use are one or both of these—for example, sulphuric acid, with which every housemaid and cook clean copper articles; salts of sorrel, with which the housewife removes her ink-stains; and, not to prolong the list, Burnett's disinfecting fluid, which is a solution of chloride of zinc. It is certain also that people have been poisoned by taking carbolic acid in mistake for harmless liquids, and more than one case has been quite recently reported; but is their number large, considering the widespread use of the acid as a disinfectant? Its peculiar smell will, we believe, prevent more than occasional accidents due to hastiness, or, like the late Malta poisoning case, to gross and unpardonable carelessness. The dangers of carbolic acid, as far as the public are concerned, may, we suggest, be further diminished, if not entirely removed, by colouring the commercial acid *blue*. At present it has a faint pink tinge, which could easily be concealed. The advantage of blue over green or red, and especially the latter, is that there are no blue medicines, and no blue wines or spirits; whereas there are one or two green medicines, and many are intentionally coloured red, while there are plenty of red wines, and one, if not more, green liqueurs. It may be objected to this suggestion that blue carbolic acid would injure clothes, etc., washed in it; but no doubt some such indifferent blue might be used as washerwomen already employ, and which is quite harmless. For sewage or closet disinfection the colour of the acid, of course, makes no difference.

So much for the general indictment against carbolic acid—a body which has probably saved, and is saving every day, more human lives than any other drugs, except perhaps quinine and opium.

Let us now turn to the other part of the subject, to which, of course, the statement just made refers—the use of carbolic acid in antiseptic surgery. Are its ill-effects here so great as to counterbalance its good ones? In some cases certainly yes, as is proved, without going farther, by the attack of Professor Küster and others on carbolic acid at the last Congress of German Surgeons at Berlin. Possibly the slow progress which antiseptic surgery has yet made in this country has something to do with our hearing fewer accusations against the acid here than we do from Germany, where its reception has been enthusiastic to a degree which must be very pleasing to Professor Lister. Perhaps, also, the greater use in Germany of jute and other bandages soaked in aqueous carbolic acid solution has made cases of poisoning by it there more frequent.

Anyhow, the results of the study of “carbolic acid intoxication,” as it is called, deserve our attention; and we propose here to refer especially to the recent papers of Dr. LANGENBUCH, of the Lazarus Hospital, Berlin,¹ and Dr. SONNENBURG,² on the subject.

Both these writers agree that the dangers of carbolic acid are chiefly seen in children and delicate woman. Healthy adults mainly suffer from nausea, vomiting, and headache; while children get severe collapse, with subnormal temperatures of 36° to 34° Cent., scarcely perceptible pulse, pallor and cold sweat, and which may be preceded by a rise of temperature to 39° Cent., with restlessness and excitement. This condition may end in death, as in a case of Dr. Langenbuch's, where a girl of five years, who had had an abscess connected with the hip-joint opened and dressed antiseptically, died within forty-eight hours of undoubted carbolic acid collapse. Hence it is just in this class of cases that it is of

¹ “Klinischer Beitrag zur Lehre von der Carbol-intoxication,” Berliner Klin. Woch., No. 28, 1878.

² “Zur Diagnose und Therapie der Carbol-intoxication,” Deutsche Zeit. für Chir., IX., 356.

importance to be able to find out early whether carbolic acid poisoning is setting in or not; and the researches of Baumann and Herter (*Zeitschrift für Phys. Chemie.*, i.) have shown that, *pari passu* with its onset, the salts of sulphuric acid disappear from the urine, until when the poisonous symptoms reach their height not a trace of them is present. At the same time the quantity of associated sulphuric acid (*gepaarte Schwefelsäure*) is considerably increased. To detect the diminution of sulphates in the urine it is only necessary to remove any albumen present by boiling, to acidify with acetic acid, and add chloride of barium in excess. This reagent gives a milky cloud of sulphate of barium in the presence of sulphates, but a mere haze or no alteration at all if there is carbolic acid poisoning. Baumann has further shown that if sulphate of soda is internally administered to an animal whose system contains carbolic acid a harmless phenol-sulphuric acid is produced, so that that salt or any other soluble sulphate is a direct chemical antidote to carbolic acid. Sonnenburg further finds by experiments on men that not only do the symptoms of carbolic acid poisoning disappear more quickly if sulphate of soda is administered, but also that if this salt is at once given when the urine becomes dark-coloured, it exerts such an influence in restraining the further outbreak of poisonous symptoms that it is possible, unless there is great individual sensitiveness to carbolic acid, to continue the dressing as before. No doubt, however, it is better to manage the dressing so that there shall be no carbolic poisoning, and Dr. Langenbuch suggests the following measures which he has himself tested for doing this. When dealing with children and delicate women he avoids much previous disinfection of the skin by rubbing and brushing, and trusts to the spray during the operation for disinfection. He then wraps the skin of the parts round the field of operation in gutta-percha tissue which has previously lain in 5 per cent. carbolic solution, and been carefully freed from excess of acid just before use by washing in 1 per cent. aqueous carbolic acid. The tissue adapts itself closely to the skin, and is perfectly free from irritating properties; hence it may be allowed to remain during the whole treatment, its object being to protect as much of the skin as possible from contact with the carbolic acid of the dressing. This dressing consists first of several layers of cotton-wool, and then of pieces of jute, both first disinfected in 5 per cent., and thoroughly washed out in 1 per cent. carbolic solution before using. The whole is fixed with gauze bandages wetted with 2 per cent. solution, and an elastic and very loosely drawn antiseptic bandage goes over all. From time to time the whole dressing is moderately moistened with carbolic solution, and it is kept wrapped up in a large India-rubber cloth.

Since the adoption of this modified method, Dr. Langenbuch states that "the *entente cordiale* between himself and carbolic acid has been completely restored." The danger with aqueous solutions of carbolic acid appears to arise more from absorption through the skin, especially by way of the sweat-ducts, than through the surface of the wound, which is probably protected by the coagulation of serum-albumen by the acid. Possibly by soaking the dressings in carbolic oil, as Mr. Howse has long done at Guy's Hospital,¹ we may obviate the unpleasant consequences attending the use of watery solutions. We all know that the skin and the system at large will tolerate a 10 per cent. carbolic oil even over a tolerably wide surface, so that probably the acid does not permeate the skin so freely in this form. In any case the observations of Langenbuch, Baumann, and Sonnenburg are very interesting and instructive.—*Med. Times and Gazette*, Oct. 19, 1878,

¹ Guy's Hospital Reports, 1878, page 270.

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HENRY C. LEA, Philadelphia.

THE MONTHLY ABSTRACT OF MEDICAL SCIENCE.

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FEBRUARY, 1879.

Anatomy and Physiology.

An Interesting Malformation of the Foot.

In the *Berliner Klinische Wochenschrift*, for August 26, Dr. BRUDI gives the following account of a malformation which he observed in the foot of an artilleryman under his care in hospital:—

On the great toe of the left foot, in the angle between the inner and posterior borders of the nail, is a tumor of the size of a thumb-nail, attached by a short, thick, scarcely movable pedicle. Half of the swelling extends over the nail, the other half reaches onwards beyond it. It is covered by a somewhat red but normal skin. At the peripheral end an articulation is distinctly recognized, and on closer examination it is seen to represent in miniature a perfectly formed third foot. Not only are there five small toes, but each toe is provided with a distinct nail; those on the first three toes especially are well developed; the fourth and fifth toes are united.

The little foot is a right one. The greatest length, from the pedicle to the point of the great toe, is 17 millimetres ($\frac{1}{3}$ ths of an inch); the length gradually decreases, until at the little toe it is only a few millimetres. The first three toes are on the average 4 millimetres ($\frac{1}{10}$ ths of an inch) long; the fourth and fifth are somewhat shorter. The part corresponding to the metatarsus is 15 millimetres (0.6 inch) in its greatest width, and passes without sharply defined limit into the very short pedicle, which is 6 centimetres wide and 14 in circumference. The whole is moderately movable, and the skin is firm. No trace of bones or joints can be felt.

Whenever the man cuts the nail of his great toe he is obliged to support the small foot, as it would otherwise impede him. He arrived spontaneously at the conclusion "that he must certainly have three feet." The accessory foot gives him no trouble whatever, and does not in the least interfere with the discharge of his duty as a gunner. His upper extremities are perfectly normal. The malformation is congenital, and nothing similar is known to exist in the family.—*London Med. Record*, Dec. 15, 1878.

Materia Medica and Therapeutics.

Coffee.

Professor BINZ has been investigating the action of the constituents of coffee, which he finds possess a certain antagonism to the action of quinine. He injected beneath the skin of a strong dog .7 gramme of caffeine, and the temperature in an

hour rose a degree Centigrade. With smaller doses (.2 grm.) the rise is slighter ($.3^{\circ}$ C.), and after large doses (about .5 grm.) the elevation may be as much as 1.4° C., without there being any other disturbance obvious, except a somewhat stiff condition of the animal's muscles. Large doses also caused a considerable elevation of temperature, and death, with convulsive symptoms. This effect of caffein was hindered by curara and by artificial respiration. It was also found that moderate doses of caffein raised the blood pressure, the dogs employed for the experiment being only narcotized by alcohol, and neither curara nor artificial respiration being employed. Section of the vagus did not interfere with this result, and the elevation of the blood-pressure is thus not due to an influence exerted through the vagus.

Bontron and Frémy gave the term *caffeon* to a substance produced by roasting the coffee beans, and separating from a distillate with ether. It is an ethereal oily substance, and is found by Binz to have a stimulating action on the brain, heart, respiration, and animal heat. He agrees with Hoppe-Seyler and Voit, that the infusion of coffee or caffein in dietetic doses causes an increase rather than a decrease of the tissue changes.—*Lancet*, Oct. 12, 1878.

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Batiator Root: a Substitute for Ipecacuanha.

M. STANISLAS MARTIN (*L'Union Pharmaceutique*, No. 8) gives a description of this root, which is derived from a plant growing in Senegal. Seeds of it have been planted in the Museum of Natural History at Paris, from which the plant will hereafter be determined. The root is identical in its effects with ipecacuanha in the same doses.—*London Med. Record*, Dec. 15, 1878.

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The Therapeutic Effects of Bryony, Drosera, Gelsemium Sempervirens, and Cayepona Globulosa.

Dr. LOUVET-LAMARE has published in the *Année Médicale de Caen* (June, 1878), some interesting observations on the effects of bryony and drosera in whooping-cough. In the first stage of the disease he administers tincture of bryony, in daily doses of fifteen minims, to children aged seven years; and states that it very quickly diminishes the bronchitis, stimulates the appetite, and does not create nausea. This plant seems to possess astringent properties, as is shown in the remark made by Barbier in his *Materia Medica*, vol. iii., where he says that the peasant women are in the habit of taking, during some days, enemata made with the roots of bryony, when they cease to nurse their babies, and wish to prevent the secretion of milk in the mammæ.

Drosera has proved very efficient when whooping-cough has reached the paroxysmal stage. It was also employed formerly against dropsy and disease of the lungs, and is said to have been used with apparent success in phthisis.

Gelsemium sempervirens is a very powerful sedative in cases of neuralgia, especially if the latter be not complicated by local congestions. It is very efficient in neuralgia of the upper parts of the body, but loses some of its power in the lower parts of the latter. *E. g.*, neuralgia of the face and the teeth are speedily removed by it; then follow, classed as to the power of resisting the power of the drug, neuralgia of the brachial plexus, of the intercostal, ilio-lumbar, crural, and ischiatic nerves. It has also been used with great success in hemicrania. Gelsemium is dispensed in pills or in the form of a tincture, the dose of which varies from fifteen drops a day to ninety drops. The effects of this drug must be carefully watched, because it is apt, especially if taken in too large quantities, to produce symptoms of poisoning, which first show themselves in the eyes. The patients complain of giddiness, their upper eyelids have an irresistible tendency

to drop, and when lifted up with the finger the objects appear double; at the same time, a strong sensation of weakness and pricking is felt in the arms. A subcutaneous injection of morphia has, however, always proved a good antidote and removed the alarming symptoms.

The cayopona globulosa is found in Brazil. It is a very powerful drastic, and much used in veterinary medicine. An alkaloid, cayaponine, has been extracted from it, which contains the efficient parts of the plant. Experiments have been made with this substance in the form of a solution; if swallowed, it produced very copious and repeated evacuations, but without any pain in the bowels. When injected under the skin it caused a very large and painful swelling, which was surrounded by a network of smaller swellings, radiating from the centre, and apparently produced by some irritation of the lymphatic vessels. There was not the least trace of any drastic effect in this case.—*London Med. Record*, Dec. 15, 1878.

The Therapeutic Effects of Iodine contained in Human Milk.

Dr. LAZANSKY (*Vierteljahrsschrift für Derm. und Syph.*, Band v.) has lately made experiments on the effects of human milk which contained iodine. One gramme of iodide of potassium was administered daily to a syphilitic woman who was nursing a baby, aged five months, suffering from the same disease. The iodine could be traced to the mother's milk and urine on the same day, but only on the next morning in the baby's urine. The effect on both mother and child was remarkably good. Iodine does not in the least affect the secretion of milk.—*London Med. Record*, Dec. 15, 1878.

On the Action of Iodoform.

Dr. ZEISSEL relates (*Wiener Medizinische Wochenschrift*, No. 21, 1878) his experience of the remarkably favourable results of the use of iodoform in venereal sores. He uses a powder for sprinkling the part, consisting of 7 centigrammes (little more than a grain) of iodoform in 5 grammes (75 grains) of sugar of milk. For internal use, he employs the following formula: iodoform, 1.5 gramme (22 grains); white sugar, 3 grammes (45 grains); to be divided into twenty powders, of which one is taken thrice daily. He recommends this especially in the neuralgic affections of syphilis; it has been proved also very useful in certain cases of ordinary neuralgia.—*London Med. Record*, Dec. 15, 1878.

Chloral Plaster.

M. YVON (*Bulletin de Therapeutique*) has taken advantage of the fluidifying effect of camphor on chloral-hydrate to make a plaster, the formula for which is as follows: Chloral, 5 grammes; camphor, 15 centigrammes; gum-tragacanth, 20 centigrammes; glycerin, 2 or 3 drops; starch, 5 or 2½ grammes. This, when applied to the dry skin, produces a blister in twelve hours; but, after the escape of the serum, a superficial eschar is formed. If the skin were slightly moistened before the application, a burning sensation was produced in a short time, and an eschar like that of a burn was formed. Yvon contends that chloral hydrate may act as an irritant, but that it is very uncertain and difficult to control. On the other hand, he recommends as a good local irritant a mixture of 15 grammes (232 grains) of chloral, 59 centigrammes (7½ grains) of camphor, one gramme (15½ grains) of chloral-hydrate, and 2 or 3 drops of water.—*London Med. Record*, Dec. 15, 1878.

On Chloral as a Local Revulsive.

Dr. PEYRAUD describes the local action of chloral in an article in the *Bulletin de Thérapeutique*. In the case of a patient to whom he applied the chloral on cotton-wool to the temple for the relief of neuralgia, a burn of the third degree was formed in thirty or forty minutes. Dr. Peyraud then mixed chloral with gum-tragacanth, spread it on paper, and applied it to his own arm. In twelve hours a blister was formed, without any pain; the same result was found in several patients to whom the chloralized paper was applied. The absence of pain depends upon the chloral being mixed as above, if applied in powder; strewed on plaster or cotton-wool, it produces painful burning. The blister does not rise until the chloral plaster has been removed for an hour or more.

Dr. Peyraud also observed evidence that the chloral was absorbed by the skin. After the application, several of the patients fell into a deep sleep; and the same occurred to Dr. Peyraud himself when the surface to which the chloral was applied was external. This hypnotic effect often precedes the revulsive action. The blisters are less distinct the more concentrated the application is; the vesication is less constant than that produced by cantharides. The suppuration lasts about five or seven days. Dr. Peyraud recommends the chloral paper as a mild and painless application.—*London Med. Record*, Dec. 15, 1878.

On Vaginal Suppositories.

M. E. RENNARD (*Pharmaceutische Zeitschrift für Russland*, Nos. 14–15) says that these are mostly prepared by melting together the required ingredients and pouring them into suitable forms, in order to let the mass solidify. A very good vehicle is a mixture of water, gelatin, and glycerin, which will, however, only retain its transparency if the water be all evaporated off. The proportion is one part of gelatin to six of glycerin, which may require modification according to the concentration of the glycerin, the weather, or the other ingredients. Almost all substances may be incorporated with this mass, without undergoing alteration; only tannin enters into an insoluble compound with gelatin.

An admirable substitute for the latter is *agar-agar*. This is a species of gelatin prepared in Japan from various algæ, chiefly *Fucus Amansii*, which is free from nitrogen, occurs in the market in quill-shaped shreds, and is used exactly like animal gelatin. It absorbs a very large quantity of water, one part of it still yielding a tolerably solid jelly with 60–70 parts of water. According to Professor E. Reichardt, of Jena, agar-agar consists of pararabin, a carbohydrate, which is also valuable as a nutriment. It dissolves in boiling water, and yields arabic acid after sufficient digestion with alkali.

To prepare vaginal suppositories, a jelly is made from one part of agar-agar and thirty of water. This, however, has a turbid milky look. If it be desired transparent, the mixture should contain one part of agar-agar, ten parts of glycerin, and twenty parts of water. The agar-agar is allowed to soak in water over night, of which it takes up about twenty parts; it is then heated until liquid, and the glycerin added. With glycerin alone it forms no jelly, but a tough transparent mass. Any desired quantity of tannin may be added to the jelly, without being rendered insoluble.—*London Med. Record*, Dec. 15, 1878.

The Use of Sulphuret of Carbon in Dressing Wounds.

M. MAUREL read a paper at the meeting of the Société de Thérapeutique on June 12 (*Gazette Hebdomadaire*) on the employment of sulphuret of carbon in dressing wounds. He says that a solution of gutta-percha in sulphuret of carbon

may be of service in exceptional cases. One serious inconvenience, however, arises from the fact that after several dressings, excoriations are produced around the wound. This always limits the use of it, especially in dressing erysipelatous wounds. During his long residence in Guiana, M. Maurel never observed that the sulphuret of carbon had any marked action on ulcers of a bad nature. He found that compresses steeped in a solution of gutta-percha do not become rigid enough to be used as an immovable apparatus.—*London Med. Record*, Dec. 15, 1878.

On the Antiseptic Method.

When Prof. LISTER was in Paris in the summer he addressed an oral communication upon this subject to the Paris Société de Chirurgie, and we reproduce from the last number of the *Bulletin* of the Society the succinct and interesting statement which he then made.

Several members of the Society having expressed a wish to hear some observations upon the antiseptic method, I feel great pleasure in complying with their desire.

Union by the first intention is no new thing, and when surgeons attempt it for small wounds, as in hare-lip, they do not always obtain it. The object of the antiseptic method is to obtain it as the ordinary result, and to accomplish cures which, without it, they could not hope for. Let us take, for example, cold abscesses. If we do not open them, no inconvenience arises, except from their size. If we open them by small incisions, fever supervenes, with accidents of putridity leading to hectic and death. If to avoid this danger we practice punctures with aspiration, in the majority of cases the pus will form again, the operation has frequently to be had recourse to again, and the patient is not cured. But it will be entirely otherwise if the abscess be largely opened, if a drainage-tube be inserted to obtain a free issue of the discharge, and if, after having operated by the antiseptic method, we apply a good antiseptic dressing which is continued with great care until the cure is complete. The first results obtained are a cessation of the fever and the production of a serous discharge, which becomes so slight in a few days as to require the dressing only to be changed once a week. If with this mode of dressing we combine the precaution of insisting upon the horizontal position being kept, we may effect the complete and radical cure of our patients. I have, thanks to this treatment, obtained an absolute cure in a great number of cases, in some of which there have been caries and sequestra of the bodies of the vertebrae. This is a result which, it appears to me, it would be difficult to obtain by any other mode of treatment.

The pyogenic membrane of these congestive abscesses does not produce pus unless it is irritated. Prior to the opening of the abscess there is an irritative tension produced by the accumulation of pus; and if we open the abscess without antiseptic treatment, we relieve the pressure, but we introduce another cause of irritation—putrefaction. Prior to opening the abscess, inflammation of the bone and then the tension induce suppuration; and after opening, putrefaction acts in the same way. If we suppress these causes of suppuration, and also suppress the mechanical irritation produced by the vertical position, these lesions are found to differ in nowise from other inflammations—the inflammation ceasing when the cause of external irritation has disappeared.

During the first days after the formation of a wound there is no pus, whatever kind of dressing may be employed; but some days after we find pus and granulations which have preceded the pus; for when granulations have formed there is, as in the cavities of cysts, no tendency to suppurate unless irritation is present. Thus, in Reverdin's method of skin-grafting, if we place a graft on a granulating

surface, graft and granulations unite by the first intention. Granulations, then, do not possess the property of forming pus. The epidermic graft acts as a dressing protective against all irritants; and when a granulating surface is thus protected, it ceases to furnish pus or even serum. If we employ a topical antiseptic, as chloride of zinc or carbolic acid, pus and granulations are produced; but if between the antiseptic and a recent wound we place a non-irritant substance capable of protecting the wound from the irritation of the antiseptic, no suppuration will be produced. If in large, deep, and widely separated wounds, filled with coagula of blood, we place a portion of protective substance and over this the antiseptic, the coagula do not putrefy and there is no suppuration. On removing the upper layer of the coagulum we find a cicatrized surface, without suppuration and even without granulation. As yet we have not been able to obtain a protective sufficiently perfect to avoid all suppuration from a wound covered with granulations, but we are able greatly to diminish its abundance. Antiseptics, then, exert a direct action on the tissues, and at the commencement of my researches I was much astonished at finding pus, even when the causes of putrefaction were kept at a distance—the antiseptics themselves inducing irritation of the wound.

Putrefied substances are irritating, and if antiseptics are capable of developing suppuration, how much more will this be the case with substances in a state of putrefaction! But a great difference is to be observed here—irritation from the antiseptic only acting upon the point with which it is in contact; while putrefaction, being fermentation, extends wherever there is the material capable of serving as alimentation for the vibriones. Thus, we may admit three causes of suppuration, one proceeding from inflammation without putrefaction, the second produced by the irritation of antiseptics, and the third caused by substances in a state of putrefaction.

I do not wish to enter into all the details of the dressing, but I am desirous of giving some account of the employment of the protective. This, which is nothing but a piece of varnished tissue, does not possess any antiseptic property, and if it is dipped in carbolized water prior to its application, this is only in case any septic body may exist on its surface having a tendency to mix with the pus. But the carbolic acid thus existing in small quantity on its surface rapidly disappears; and unless it did so the protective would become irritating and its application meaningless, as its office is to shelter the wound from the irritation of the antiseptic. An important point, to which I cannot draw too much attention, is not to allow the protective to pass beyond the dressing, as the causes of putrefaction might penetrate beneath it. The antiseptic dressing must on every side project beyond the protective, as if this were the wound itself. If some rags dipped in a carbolized solution were only employed as an antiseptic dressing, and the discharge was very abundant, putrefaction would take place in twenty-four hours, because the liquid proceeding from the wound rapidly displaces the antiseptic, the wound being then no longer preserved. It is therefore indispensable that, whatever substance may be employed, there must be for it a kind of receptacle holding the antiseptic substance in reserve. On this subject allow me to allude to a point to which attention has been drawn by my late colleague Sir Robert Christison, namely, that the force of action of a medicinal agent in solution does not depend alone upon the quantity of this dissolved, but also on the manner in which it comports itself with the vehicle. Thus, water having but little affinity with carbolic acid, and oil a much greater affinity, an aqueous solution of a twentieth of carbolic acid is almost caustic, while the irritating action is much less strong with a tenth in oil, and if we employ resin a mixture of a fifth is almost insipid. For the purpose of cleansing an instrument or the hands, we resort to the aqueous solution, the action of which is strong but temporary; but

for a dressing intended to remain on for some days it is necessary to employ a vehicle which has more affinity for the acid. With this the discharge may traverse the dressing without removing all the antiseptic which is held in reserve. It is with a mixture of carbolic acid and resin (to which some paraffin is added to render it less agglutinative) that the gauze is prepared which is the true receptive of the antiseptic. The discharge cannot remove the resin, which strongly retains the carbolic acid. Besides the protective and the gauze there is also the macintosh, the object of which is the prevention of the direct passage of the liquids of the wound through the dressing, and also the increase of the antiseptic effects of the gauze. When a dressing has been left on for several days after application, sometimes it becomes displaced in consequence of the movements of the patient, especially in cases of cold abscess; and in order to obviate this inconvenience I place an elastic bandage around the edges of the dressing, and which may be applied with a certain amount of force without inconvenience and without obstruction to the circulation. For superficial wounds I sometimes employ boric acid instead of carbolic; and in order to obtain boric lint I dip lint into a boiling solution of boric acid, and thus procure a rich antiseptic receptacle. This mode of dressing has furnished excellent results in ulcers of the leg. I first purify the surrounding epidermic surfaces by means of a carbolic solution (one in twenty) which thoroughly penetrates the epidermis and purifies even the hair follicles. When gangrene exists on the granulating surface of the ulcer, it is necessary to apply something stronger than carbolic acid; and until of late I made use of the chloride of zinc, but as this, when the wound is large, has the inconvenience of inducing very severe pain, I have replaced it by iodoform. After the wound has been washed with carbolic acid solution, the iodoform powder is applied, then the protective, the boric lint which covers this extending beyond its margin on every side. There is very little suppuration, and after two or three daily dressings these may be left on without removal for several days. The protective has a double object—the preventing the direct irritation of the antiseptic, and the maintaining the surface of the wound in a constant state of humidity, which prevents the formation of a crust under which pus might accumulate and cause, through tension, inflammatory suppuration. If the formation of these crusts were not avoided by means of the protective when the dressing was removed, the epidermic layer of latest formation might be easily torn off. I also employ chloride of zinc for a special action it exerts. A single application of a solution of one-twelfth prevents putrefaction in a wound, even when the causes of putrefaction cannot be removed. Thus, after amputation of the tongue, if the wound be touched with it a single time, no odour will arise until granulations appear. There must certainly be a layer of mortified tissue, but it must be almost microscopic, since it is not appreciable, and does not prevent union by the first intention. Chloride of zinc may preserve wounds from putrefaction in cases in which it would seem difficult to avoid it, such as those of cystotomy and fistula in ano. In cases in which I am unable to remove all the fistulous tracks, I scrape them with a curette, and apply the chloride with excellent results. If putrefaction supervenes, it does not appear until after three or four days, and the patient is protected, at least during the earlier period, from the accidents of infection.

In answer to some observations by M. Després, who stated that he believed Prof. Lister would still meet with relapses in the cases of cold abscess dependent on disease of bone which he supposed to be definitely cured, Mr. Lister replied that he regretted not being able to exhibit the patients who, having reached the last stage of hectic fever, immediately after the application of the antiseptic treatment found it disappear. He did not mean to assert that relapse never took place, but he affirmed that in the majority of cases a definite cure was obtained.

In order that relapses may be avoided, the patients must be prevented from getting up. When the fistulous openings have become cicatrized, repose for six or seven weeks must still be exacted, when a quarter of an hour's walking may be allowed. If pain is produced, rest must again be insisted upon, awaiting a new attempt.—*Med. Times and Gaz.*, Nov. 2, 1878.

Medicine.

On the Local Treatment of Meningitis.

Dr. MOSLER (*Deutsche Medicinische Wochenschrift*, 1878, Nos. 23, 24, and *Centralblatt für die Medicinischen Wissenschaften*, Nov. 23) describes the case of a young man, aged 27, who had for six weeks been suffering from a very severe attack of articular rheumatism. In the seventh week the pain and swelling had abated in the joints, but the patient showed symptoms of cerebral meningitis combined with constant fever. Blisters were immediately applied to the crown of the head, which had been previously shaven, and behind the ears; the dangerous symptoms soon disappeared and the patient's health was rapidly restored. The author explains the effect of the blisters from the fact, which has been proved by experiments, that the volume of blood contained in the brain is greatly lessened by irritants applied to the skin.—*London Med. Record*, Dec. 15, 1878.

Frequency and Etiology of Epilepsy.

Dr. BERGER (*Deutsch. Zeitschrift für Prakt. Med.*, 1878, No. 21; and *Centralblatt f. d. Med. Wiss.*, No. 46) has had the opportunity of studying 105 cases of epilepsy, which have partly come under his own observation and partly been collected by others; and gives the following statements on the frequency and etiology of the disease. In 65.93 per cent. of the cases, the disease first showed itself in the time between infancy and the twentieth year; but much more frequently than has been accepted hitherto during the first four years of childhood. The female sex is particularly exposed to it at the age of fifteen to twenty, and the male sex in the years between thirty and forty. This difference may be explained by the beginning of puberty in women and by the excesses committed by men at that time. The cessation of the menses has not the least influence on epilepsy, which very seldom appears for the first time in old age. Dr. Berger observed it once in an old woman aged seventy-four, in whom, after having been perfectly well all her life, the first attack of this disease was produced by a very violent fright. Epilepsy is often hereditary, as the author has distinctly traced in 23 cases out of 71 which he had studied for the purpose of elucidating the question. He has never observed the first outbreak of the disease occur either before the beginning of puberty or after the thirtieth year. In both sexes, and especially in women, epilepsia gravior is the most common form. The author gives a series of observations on the etiology of epilepsy, which tend to illustrate the different experiments that have been made to produce epilepsy artificially. The following were the principal causes. A traumatic affection of the median nerve caused epilepsy in a man; disturbances of the sexual organs in women had the same effect. (One was a case of hæmelytrometra, which was subsequently operated on; the other, cessation of the menses caused by a severe cold.) Four cases may be classed

under the head of epilepsy caused by injury. The patients (three male, one female) had sustained injuries to the head, either through a blow, fall, or box on the ear, and the disease subsequently manifested itself either directly afterwards, or after weeks or even months had elapsed, while in the mean time the only thing the patients complained of occasionally were diffused headaches. The next cases belong to the form of epilepsy caused by affection of the cortical substance, especially in syphilitic persons (according to Fournier, Charcot, and others). Among these, he gives a very full description of a case of epilepsy in a man aged thirty-eight, who had been several times under treatment for syphilis, and who was subject to epileptiform attacks that did not differ in the least from general epilepsy. He was cured by a very energetic anti-syphilitic treatment. Two further cases recorded describe vaso-motor epilepsy in a girl aged nineteen, and a very interesting case of epilepsia gravior occurring also in a girl aged nineteen after poisoning with carbonic acid. In the treatment of the disease, the author has used several methods with varying success. Hystero-epileptic patients were the only ones that derived any benefit from Chapman's method of application of ice or cold water to different parts of the body; true epilepsy was never cured either by this method or by electricity. In vaso-motor epilepsy, the constant current proved very useful. Some authors have highly commended the effects of bromide of camphor and bromate of zinc; but Dr. Berger does not agree with them; neither has he seen any satisfactory results produced by atropin and curare; nitrite of amyl, if inhaled in time, sometimes proved efficient in cutting short the paroxysm. The most favourable result has been caused by bromide of potassium, if given in large doses (from six to twelve *grammes*, equal to one and a half to three drachms, daily); the disease sometimes only manifested itself again after two years, but it never was completely cured. Bromal-hydrate has a similar effect to that of bromide of potassium (Steinauer).—*British Medical Journal*, Dec. 7, 1878.

The Differential Diagnosis between true Epilepsy and Hystero-Epilepsy.

M. CHARCOT (*Gazette des Hôpitaux*, 1878, No. 49) says that true epilepsy develops itself, after only a short aura, in the form of tonic and clonic spasms accompanied by marked stertor. The convulsive stage of the hysterical paroxysm is preceded, after an aura lasting one, two, or even several days, by a peculiar, prolonged cry; this is followed by violent, purposeless, fantastic movements, clonic spasms, and great psychic excitement, perhaps even delirium; but none of these symptoms are accompanied by the slightest signs of stertor.—*London Med. Record*, Dec. 15, 1878.

On Myelitis.

Messrs. PROUST and JOFFROY drew the following conclusions (*Revue Mensuelle*, April 8, 1878) from a case which they observed, in which acute myelitis began with an apoplecticiform attack, and also from some cases selected from books. 1. Acute myelitis often begins suddenly. Formerly this was called a primary "hæmatomyélie." This has not been confirmed, however, in the more recent observations, so that apoplecticiform paraplegia must be classed with myelitis. 2. The fall which sometimes occurs as the first symptoms of apoplecticiform myelitis might be mistaken for the cause, whereas it only represents the first striking indication of the disease. 3. The changes in the constituent elements of the spinal cord consists chiefly of hypertrophy of the axis-cylinder, and of hypertrophy, with subsequent atrophy and granular pigmentation of the nerve-cells. The very considerable increase of the intercellular substance of the gray matter is little

marked near the inflamed parts in the white substance, consequently the form of myelitis is as much interstitial as parenchymatous.—*London Med. Record*, Dec. 15, 1878.

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A Case of Spastic Spinal Paralysis ending in Recovery.

One of the many undetermined points connected with the disease described by Erb under the name of spastic spinal paralysis (*tabes spasmodica*, Charcot) relates to the prognosis. Erb believes recovery to be extremely rare, though less so than in other forms of chronic spinal paralysis. Charcot refused to believe in the possibility of recovery from the disease. Westphal has published one case in which complete recovery took place. In Dr. Kussmaul's Klinik at Strasburg, Dr. REINHARD VON DER VELDEN observed the present case (*Berliner Klinische Wochenschrift*, September 23, 1878); it is distinguished from Westphal's by the acute onset of the disease, and the rapidity with which all the characteristic symptoms were developed.

E. P., aged 27, clerk, had a good family history, and had enjoyed good health, with the exception of a short indefinite illness at seven years of age. No traces of syphilitic infection could be discovered. Slight kypho-scoliosis was present, which, the patient said, dated from birth. Two days before admission, he attempted suicide by jumping into a river; after being rescued, he walked several miles home in his wet clothes, exposed to a high wind, and went to bed. Next day, he complained of pains in the abdomen, and gastric troubles.

On admission, on May 13th, the tongue was coated, and the abdomen somewhat hard and full. There were no other objective symptoms. He had no appetite. There was no constipation. Temperature, 100.9; pulse, 82; respiration, 14. Castor-oil was ordered.

May 14. He had excessive perspiration during the night; no abdominal pain, but a feeling of pressure on the chest. There were no other physical signs, no fever.

17th. He had pains in the region of the bladder, and dragging pains in the testicles. His appetite was good; the alvine secretions were natural. He looked pale and anxious, and refused to get up.

18th. The patient was small and anæmic, with weak muscular development, but was moderately fat. He complained of a peculiar stiffness in the legs, which he first noticed the preceding evening. He had no pain, and slept well. No disturbances of circulation, respiration, or digestion were present. On being lifted out of bed he was unable to walk; he could hardly move one leg before the other, and could not flex either knee or ankle. Both legs were stiffly extended by a spastic contraction of all the muscles. A slight tremor was also observable in them. The spasms became more intense while the patient stood, and he was thrown more and more forwards upon his toes. When supported on both sides and taken along the ward, he either let both his legs drag stiffly after him, or attempted, by means of the pelvic muscles, to swing them round alternately.

On being replaced in bed, the muscles of both lower extremities were seen to be strongly contracted, and in a state of constant tremor; the latter, however, gradually passed off when the patient was left quiet and became warm in bed. All movements could be performed, but only very slowly. Passive movement of the limbs met with moderate resistance. After about half an hour the spasm also became less severe; movement was easier, but weakness was still evident. No pain was caused by pressure on the spine. There was no disturbance of sensation; neither trophic nor vasomotor symptoms could be discovered; the sphincters were unaffected; the intellect was clear; there was no vertigo nor inequality of the pupils. There was neither albumen nor sugar in the urine.

23d. The patient stated that when he was warm in bed, his legs neither trembled nor were stiff, but that he could only lift them a very slight distance; he could not cross one over the other. The attacks of rigidity and tremor occurred two or three times daily, sometimes spontaneously, and sometimes in consequence of external causes. During a strong attack the patient would perspire freely, and afterwards feel quite exhausted. Strong pressure upon the crural nerve during an attack caused the muscular spasm to cease in the leg of the same side, but to become more powerful in the other. By dint of great exertion the patient was able very slowly to flex either of his legs during the period of spasm; as soon, however, as the leg and thigh were inclined to one another at an angle of about 45° , the muscular resistance to the movement suddenly ceased, and the heel was brought with considerable force against the nates. The whole phenomenon very much resembled the sudden closure of a pen-knife after the resistance of the back-spring has been overcome. The limb was now spasmodically fixed in the position of extreme flexion. The spasm could be at once relaxed by exerting pressure upon the crural nerve. If this were not done, and the patient were directed to extend the leg, he was able to do so slowly and with great exertion until it had slightly passed the right angle, when it was suddenly and violently brought into the position of extension.

The tendon-reflexes were greatly increased; sensation was diminished; electric contractility showed no qualitative abnormality, but was somewhat diminished in degree.

Until the middle of June the disease continued to progress; the lower limbs became paralyzed. Attacks of spasm and tremor occurred several times daily; occasionally they were spontaneous, but generally they were due to the legs being touched, or too cold; sometimes also to psychic impressions. The patient showed marked emotional disturbance, being sometimes very cheerful and happy, and at others melancholy, despairing, and excited. While in the latter condition, he attempted to divide his radial artery with a piece of broken glass, and twice stealthily obtained half a litre of brandy, which he drank neat. During the drunkenness which followed, he had the most violent spasmodic attacks.

In July the symptoms somewhat abated, and the patient could walk a little with two sticks. In the autumn, the attacks again became more violent; occasionally slight muscular tremor was observed in the arms, and once the speech was affected during an attack. At the beginning of the winter the patient was again confined to bed; the attacks were accompanied by burning pains in the knees, and formication in the legs. In January, 1878, he was again up for a time, but became worse towards the end of the month, and, after lying in bed again for some weeks, slight atrophy of the muscles of the legs was noticed. During March and April the patient was usually able to get up, and only had occasional attacks; in the beginning of May he had his last attack; after that he daily improved; at the end of the month he could walk well with a stick, and only complained of some stiffness in his knees, and of being easily fatigued. On June 24th he was discharged completely cured, the only symptom remaining being some increase in the patella tendon-reflex.

Two days after his discharge he attempted suicide by drinking a solution containing morphia and ergotin. After the use of the stomach-pump he recovered, but had an attack of acute gastritis. He also had delirium tremens for eight days, brought on by excessive drinking after his discharge. He has since remained quite well.

The treatment of the case was chiefly symptomatic, and directed to diminish the increased reflex irritability. Bromide of potassium, extract of belladonna, warm baths, and galvanization over the spinal column, had absolutely no effect.

The administration of morphia appeared to increase the number and intensity of the attacks. When the spasmodic attacks were at their worst, 30 to 60 grains of chloral, administered *per rectum*, proved useful.

From the middle of April the patient took chloride of gold and sodium, in doses of about one-third gr. (!) three times daily. Altogether, before his discharge, he had taken nearly 90 grains of the drug. The palliative effect of chloral seems to be established, and the fact of recovery having taken place during the administration of the double chloride of gold and sodium would justify a prolonged trial of this drug in future cases.

As to the pathological anatomy of the disease, it is clear that in this case there could have been no severe anatomical lesion in the nervous system, certainly no definite sclerosis in the lateral columns of the cord. The disease in the present case was developed in a man with an abnormal nervous constitution.

The prognosis does not seem to depend at all upon the mode of commencement of the disease, for in Westphal's case of recovery the affection commenced most gradually, while, in the present case, the essential symptoms of the disease were unmistakably developed within seven days of the severe wetting and cold, which must undoubtedly be regarded as its immediate cause.

The author speaks of the peculiar appearances noticed during the efforts of the patient to flex and extend his legs while they were affected by muscular spasm, as the "pen-knife phenomenon" (*Taschenmesserphänomen*); its explanation is difficult, but the cessation of the spasm when the limb reaches a certain position may be due to mechanical pressure or tension being exercised in that position upon some nerve. The fact that the spasm could always be checked by pressing upon the crural nerve below Poupart's ligament, favours this view.—*London Med. Record*, Dec. 15, 1878.

On Two Cases of Vascular Neurosis.

These cases are illustrated by Dr. MADER in the *Wiener Med. Presse*, 1878, Nos. 23, 24 (abstract in *Centralblatt für die Medicinischen Wissenschaften*, November 9). The patient, a locksmith, aged 43, had suffered from his childhood from swellings, which appeared periodically at fortnightly intervals in different parts of the body. Sometimes a whole extremity was affected, at other times only certain portions of the body, *e. g.*, the neck or scrotum. The patient was never feverish; he did not suffer pain. The only symptoms were as follows: The skin was turgid, red, and infiltrated, and there was much œdema of both hands and fingers. The swellings appeared and disappeared in the course of about half an hour. The attacks could not be traced to any particular cause, but there existed a curious and intimate relation between them and peculiar attacks of colic, to which the patient was subject. These attacks were particularly painful whenever swellings did not appear. They generally were accompanied by diarrhoea and vomiting. If the swellings were marked and disappeared slowly, the patient did not suffer much from colic. Some of his relatives were affected in a similar way. The author explains this curious phenomenon as being caused by a spasmodic affection of the arterioles.

The other case is a similar one. The patient, a student, aged 19, subject to palpitation of the heart, suddenly experienced a feeling of heat, which seemed to originate in the head, and to spread thence over the whole body. The skin was red and œdematous over the whole body, especially on the eyelids and the neck. The mucous membrane of the pharynx was in the same condition. The pulse was much quickened. The patient took a few spoonfuls of infusion of digitalis, and in about two hours the redness of the skin had disappeared, and diuresis was

marked. The patient felt very weak and exhausted. The author explains this case by a paresis of the vagus nerve.—*London Med. Record*, Dec. 15, 1878.

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On a Variety of Epidemic Parotitis (Mumps).

Dr. PENZOLDT of Erlangen communicates to the *Deutsche Medicinische Wochenschrift* for October 19 a notice of a variety of epidemic mumps. The usual variations in mumps consist in an exaggeration of the disorder, or in its transfer to other localities. Milder forms, however, in which the principal symptoms are but very slightly developed or replaced by other and less constant ones, seem to have been but rarely noted. In the case of a boy, Sch., aged eight years, who came under observation on the 14th May last, there were, besides elevated temperature (103.1° , 103.3° F.), swelling of both submaxillary glands, and redness and slight swelling of the tonsils, and the next day a very slight and scarcely observable swelling of the left parotid. By the 18th all these symptoms had disappeared. As there was no existence of mumps in Erlangen at the time, this case was no more than suspected. But on the 23d there occurred in the same town a case of undoubted mumps in a child who attended the same school as Sch., and had actually sat in the same class with him on the 14th. Soon afterwards there cropped up several more cases, and in some of these the submaxillary swelling was quite as prominent as that of the parotid, and in one case it was even greater. In another case there was high temperature (104.3° F.) with considerable swelling of both submaxillary glands, without any increase whatever in the parotid. In another instance, the disease began in a child with febrile symptoms, followed by marked swelling of the submaxillary glands, while the parotids were but very slightly affected. But subsequently all the children in the same family fell ill with genuine and well pronounced parotitis. These cases therefore show that mumps may be localized, principally in the submaxillary gland—a fact overlooked in many modern text-books. It may be observed also that these variations occurred in the commencement of the epidemic, which is analogous to what happens in many other infectious diseases, where the greatest abnormalities occur at the beginning, and sometimes also at the end of the epidemic.—*London Med. Record*, Dec. 15, 1878.

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Unilateral Sweating of the Face and Neck.

Dr. J. HABRAN relates the following case in *L'Union Médicale du Nord-Est* for October, 1878.

N., aged 34, with no previous ill health, and of a healthy family, had never suffered from facial neuralgia; he had several decayed teeth in the upper jaw on both sides; he had never had any discharge or dental abscess. For three years he had noticed that the right side of his face easily perspired; and this perspiration, at first slight, had become more profuse each year. The right side of his face was constantly the seat of uneasiness and of heat, occurring in successive attacks, and intermittingly. This heat was increased in stormy weather, and twenty-four hours before storms it became very distressing, and was accompanied by profuse sweating of the right side of the face, the scalp, and the neck, up to the middle line exactly. Thus sweating was independent of fatigue or of efforts; and if at the time the patient made any exertion, the left side of the head, and the rest of the body remained free from moisture. According to the patient, perspiration had always been very rare and difficult with him, even when fatigued. Now, even in winter, in squally wet weather, in high west winds, the sweating appeared on the right side, disappearing in dry weather, in frosts, and during the prevalence of the north wind. Violent emotions suppressed the secretion; and

at his first visit, although the atmospheric conditions should have favoured sweating by the above account, it was absent, which the patient explained by his emotion. Five days later, in stormy weather, the right side of the face, the neck, and the head was the seat of a very profuse perspiration. The drops of sweat were precisely limited by the median line, both before and behind. The secretion ceased at the level of the clavicle and scapula; it did not reach the shoulder; the rest of the body was free from moisture. In the morning the patient was generally free from sweat; the attack came on towards 3 or 4 P. M., with a sensation of tension and heat in the face, and profuse perspiration. It lasted all night, and in the morning his pillow was wet if he slept on the right side. The right side of the face was found to be decidedly swollen; the features were more marked, the wrinkles deeper; there was no deviation. The cheek sank, the upper lip was very thick up to the middle line; the lower lip and chin were in the same state. The lower eyelid was equally very large, but the upper lid did not seem altered. The skin of the forehead had apparently suffered little, in spite of the abundant sweating; the two sides were alike. There was nothing particular in the nose or nostrils. The beard, recently shaved, was equal on the two sides. The colour of the right cheek was deeper than that of the left—a difference which became more marked at the time when the secretion took place; the skin was thin, soft, and reddish in patches. The temperature was obviously increased on the right side; this could be easily ascertained by the touch; it was not estimated by the thermometer. Sensibility was equal on the two sides; vision was normal. He suffered frequently from coryza, affecting both nostrils equally. He had not had epistaxis. Taste was perfect. The tongue presented no apparent lesion. The hair was healthy and equally grown on both sides. The other functions, digestion, etc., were normal. He was ordered at first eight centigrammes (about one and a quarter grains) of quinine every three hours for three days without any benefit. He was then prescribed pills, containing a milligramme (one-sixtieth of a grain) of sulphate of atropine, and a lotion of corrosive sublimate (1 in 1000) to the cheek.

The patient did not return for three months, as he found himself better. He passed through the summer without being inconvenienced. He never had the sensation and heat in the cheek, and he only felt threatenings of an attack when he had indulged too freely in drink. There was no trembling in the tongue or fingers. The swelling of the face had entirely disappeared, and the colour of the two sides was equal. The temperature and moisture of the two sides were the same, although the weather was rainy and squally, which formerly was difficult for him to bear.—*London Med. Record*, Dec. 15, 1878.

On Syphilis of the Trachea and Bronchi.

Herr A. VIERLING (*Deutsch. Archiv für Klin. Med.*, 1878, Band iv. No. 21) brings forward the case of a man, aged 44, who died from the effects of tracheal stenosis six years after syphilitic infection. On *post-mortem* examination, a deep-seated ulceration was found to extend from about the middle of the trachea to the tertiary divisions of the bronchi; the cartilages were exposed, the mucous membrane infiltrated, and the cicatrices were contracted. The inferior lobes of the lung showed no signs of pneumonia, but they had a peculiar whitish appearance; they were empty of air, compact, and heavier than normal. Herr Vierling made a comprehensive selection of similar cases (45), and found that the larynx was affected in the majority of them, and that the bronchial mucous membrane alone was more rarely attacked. The symptoms are at first insignificant, but still the prognosis is bad, and, therefore, the author counsels early anti-

syphilitic treatment in cases of prolonged tracheal and bronchial catarrh, where specific disease is suspected. Deep-seated stenosis cannot be removed, and in these cases tracheotomy generally only hastens the end.—*London Med. Record*, Dec. 15, 1878.

Subcutaneous Injection of Sclerotinic Acid in Hæmoptysis.

Dr. VON ZIEMSEN, of Munich (*Allgem. Wiener Medizin. Zeitung*, October 29) uses in hæmoptysis subcutaneous injections of a solution of four parts of sclerotinic acid in 100 of distilled water. A Pravaz's syringe is injected twice or three times in twenty-four hours. The effect is said to be more certain than that of ergotin, and no pustules are produced.—*Lond. Med. Record*, Dec. 15, 1878.

The Communicability of Tuberculosis.

In a paper in the *Berliner Klinische Wochenschrift* for September 18, Dr. REICH of Mühlheim observes that the opinion is daily gaining ground that tuberculosis is infectious. The following instance, observed by himself at Neuenburg, in the Breisgau, is one in which tuberculosis was communicated to a number of children by a phthisical midwife, directly from mouth to mouth. The only two midwives practising at Neuenburg—a healthy little town of 1300 inhabitants in 1875, were R. and S. Of these, the woman S. was undoubtedly the subject of phthisis, with abundant puriform expectoration. In the first case described, Dr. Reich extracted the child by turning. While his attention was engaged with the mother, he noticed that, owing to some difficulty in the child's breathing, the nurse S. sucked the mucus from the infant's mouth, and also endeavoured to promote respiration by blowing into its mouth. For the first three weeks the child progressed well, but then its health failed, and within three months of its birth it died of well-marked tubercular meningitis, initiated by symptoms of bronchial catarrh. In May and June following two more children died of the same disease. These three cases had been attended by the nurse S. Dr. Reich's attention being thus attracted, he found, on investigation, that between the 4th April, 1875, and the 10th May, 1876, seven children, in addition to the above three, had died (all within the first year) of tubercular meningitis, although in no case was there any history of hereditary tuberculosis; that all these cases had been attended by the woman S., while of all the cases attended by the other midwife, R., not one had died of this disease, nor had any manifested in any way indications of any tubercular form of disease. The duration of the illness varied from eight days to three weeks; whereas of the ninety-two children who died in their first year during the nine years from 1866 to 1874, only two died of tubercular meningitis; and similarly, among the twelve infants who died in 1877, there was only one such case, and its parents were tuberculous. The midwife S. herself died of phthisis in July, 1876. It was ascertained that S. had been frequently in the habit of sucking the mucus from the mouth of infants, and also of caressing and kissing them. We are thus furnished with valuable hints on the manner of conducting experiments as to the communication of tubercle by inhalation or inoculation. 1. The experiments should be made on young or newly-born animals. 2. The animals should be subjected only once or twice to as direct and energetic an inhalation of the poison as possible, after which they should be well fed and cared for. 3. The vehicle of the poison should be the fresh contents of tubercular lung-caverns, if direct inhalation from mouth to mouth be impracticable.—*Lond. Med. Record*, Dec. 15, 1878.

Dyspepsia from Impaired Movements of the Stomach.

At a late meeting of the Medical Society of London (*Lancet*, Dec. 14, 1878) Dr. LEARED read a paper on a neglected proximate course of dyspepsia. He pointed out that all varieties of dyspepsia were referable to two divisions—atonic, and those depending on gastritis; the cause of the symptoms of functional dyspepsia being retarded conversion of food into chyme. There is a large class of cases in which digestible food, even in moderate quantity, is not digested with ease, and yet, in spite of much daily discomfort, the general health is hardly affected. The food is digested slowly, but effectually; there is no loss of flesh or strength; the appetite is unimpaired; and the defect cannot lie in the gastric juice. In by far the larger number of dyspeptic cases the lesion is not one of secretion, but of the proper movements of the stomach, which aid solution of food. Just as agitation of a glass containing water and crystals of a soluble salt will hasten the solution of the salts, so the attrition of the masses of food on one another by the action of the muscles of the stomach aids their digestion. Dr. Leared then described the arrangement of the muscular fibres of the stomach, and their action. In ordinary cases, whenever the contractile movements of the stomach are lessened, flatulent distension follows—due to lodgment of the food in the lowest parts of the stomach and its fermentation there—and the distension of the viscus with the gases thus evolved, as well as probably from the small intestine. Flatulence, so common a symptom in such cases, acts harmfully by stretching the muscular fibres and impairing their tonicity. Dr. Leared therefore suggests that dyspepsia should be divided, not into atonic and inflammatory, but into “dyspepsia from impaired motion” and “dyspepsia from defects of secretion.” In the former, uneasiness after meals, flatulence, and constipation are marked symptoms; in the latter, pains of sharp, shooting, dull, or dragging character predominate, the above symptoms being far less prominent, or even absent; indeed, from imperfect digestion of food in the cases due to deficient secretion, diarrhoea may be set up by irritation of the intestines by undigested food. As to treatment, regulated diet was the chief measure, the principal meal to be taken early in the day before the nervous system has been exhausted by mental or bodily exertion. Strychnia, in the form of the tincture of *nux vomica*, is the most valuable drug for this condition, and should be administered freely. Although Chomel’s condemnation of the drug had been indorsed by Brinton, strychnia has held its place as a remedy for dyspepsia. It should not be prescribed in pills, because of the difficulty of its exact subdivision, and the tendency of the alkaloid to precipitation by alkalies should be borne in mind. A dose of one-twentieth of a grain, given three times a day, should rarely be exceeded. The cases suitable for its employment required selection. Faradism was not of much service; carbolic acid, or preferably, perhaps, thymol, checks flatulency by hindering fermentation; charcoal is of use in extreme flatulency for absorbing the excess of gases, the best form being that made from vegetable ivory. In a few obstinate cases passage of a long tube was necessary to relieve distension.

A New Treatment of Tapeworm.

Dr. C. BETTELHEIM recommends (*Deutsches Archiv für Klin. Med.*, Band xxii. 1878) the following method of treating *tænia*, which has also been, independently of him, proposed by Dr. Eisenschitz. He says that it is almost certain of success, and that its action is rapid. The method consists in pouring into the stomach through a tube from half a pint to a pint of a very strong decoction of pomegranate root; the patient having previously fasted for twenty-four hours, and his bowels having been cleared—preferably by castor-oil. The inconvenience

produced by introducing the œsophageal tube is of short duration, and is more than compensated by the rapidity of the cure. Dr. Bettelheim gives six successful cases in which seven worms were discharged within periods varying from three-quarters of an hour to two hours. Three were specimens of *tænia medio-canellata*; four of *tænia solium*.—*London Med. Record*, Dec. 15, 1878.

A Case of Periodic Hæmoglobinuria.

DRS. ROBERT and KUESSNER of Halle describe a case in the *Berliner Klinische Wochenschrift* for October 28. The patient is a labourer, aged 32, of a healthy family, with the exception of his father, who died of phthisis. He himself had good health in his youth. In 1871 he had soft chancre and bubo. In the winter of 1873, while at work in the fields on a very cold day, he was suddenly seized with severe formication, quickly followed by a sense of great lassitude, heaviness of limbs, pallor of surface, and cold shivering, and was compelled to leave his work. On his way home, he passed some urine of a dark reddish colour. The next morning, although better, he only with difficulty resumed his work. During the same winter he had several more such seizures, and these were associated with some dyspnoea. From that time he lost his energy, and was loth to work; his appetite failed; his skin was pale, and he constantly had a sense of chilliness, with cold extremities. He now obtained medical treatment, and improved, though the feeling of chilliness remained; and, owing to this, he exchanged his field labour for work in a sugar-refinery. In 1875 he was similarly attacked, and since then these seizures have been tolerably frequent, and much the same as before, the rigours being followed by heat and profuse perspiration, while the urine had a dark coffee colour. Soon after one of these attacks the skin is of a remarkably brownish-yellow colour, which is even shared by the sclerotics; and they are now accompanied by a severe pain in the chest. He also suffers much and often from severe neuralgia, sometimes of the trunk, sometimes of the extremities, which has been much relieved by cupping. He is warned of an approaching attack by the sense of extreme weight in his limbs. Under these circumstances, he came under observation in the clinic in December, 1877. On examination, the heart, lungs, liver, and spleen were normal; there was some tenderness on the left margin of the left quadratus lumborum; the fundus of the eye was normal. The patient has long been a spirit drinker. Since he was only an out-patient, having refused to enter the clinic, it was impossible to obtain the urine voided during these attacks fresh, but in the end of March, 1878, some was brought which was only twelve hours old. It was very dark, almost like black coffee. Its specific gravity was 1.029. It was acid; contained many hyaline cylinders, but not blood-corpuscles or crystals, and therefore no oxalates. On boiling it yielded a large quantity of dark-coloured albumen. In the spectroscope it gave the spectrum of hæmoglobin. However, five days after this attack, nothing abnormal could be detected in the urine. Again, on the 10th April, he was caught in a shower. Soon the premonitory dragging in his limbs and shivering set in, and in half an hour afterwards the same dark urine was voided, which presented on examination the same characters as just described; but after forty-eight hours all colouring matter and albumen had disappeared, and the urine was quite normal. After this, and while temporarily confined to the house, no further attacks came on. With a view to ascertaining whether it were possible to produce one of these attacks artificially, by the internal use of substances, which are supposed to act as solvents of the red blood-corpuscles, thymol was administered for eight days, and subsequently large doses (half an ounce every hour) of glycerine for two days, without any effect. He was now put on a regular course of the saccharated carbonate of iron; his general condition im-

proved greatly, and there have been no further attacks up to the present time, but he still is under observation.

This is a case of periodic hæmoglobinuria, as described recently by Lichtheim (R. Volkmann's *Sammlung Klinischer Vorträge*, No. 154) and Franz, and agrees in every particular with their account of it. A Dutch author, Van Rossen, writing last year, puts forth the hypothesis that these are in reality cases of hæmaturia, and that in consequence of the abundance of oxalates in the urine, the blood-disks are dissolved and the hæmoglobin set free. But this explanation is clearly not admissible in the present case, for the first dark-coloured urine is voided very shortly after the commencement of a paroxysm, and no oxalates can be discovered in it. Moreover, the brown tinging of the sclerotics indicates an almost saturation of the tissues with serum containing hæmoglobin. Further notice of the case is promised.—*London Med. Record*, Dec. 15, 1878.

On Special Inflammation of the Tendons in Lead Poisoning.

M. GUBLER (*Gaz. Hebdomadaire*, Sept. 6th) pointed out at a meeting of the French Association for the Advancement of Science an unusual variety of deformity and lesion of the tendons, which he had observed for the first time in a patient suffering from lead-poisoning. This lesion consists in a sort of plastic and fungoid synovitis, seated in a sheath of the extensors on the dorsal surface of the hand. He thought it was rather to be associated with nutritive disorder caused by lead paralysis, than with the action of the poison itself. The second case, which he had observed in a patient suffering from cerebral paralysis of saturnine origin, confirmed him in this idea. It was, however, difficult not to be reminded of the disease described by Garrod under the name of saturnine gout; and the necropsy which he had occasion to perform led M. Gubler to satisfy himself that there were neither tophic nor uric acid products, but that the case was one of special tendinous lesion. Legros, who examined the patient, recognized necrosis of the primitive tendon sheathed in a tendinous tissue of new formation. There was here an analogy with the invaginated sequestrum in the case of central necrosis. M. Gubler has seen this deformity after paralysis *à frigore* in a coachman who had suffered from the effects of cold rain falling on the hands. From these various facts M. Gubler thought it might be concluded that the disorder was one of nutrition, due to paralysis, from whatever cause arising. M. Verneuil believed rather in the action of the poison than in nutritive disorder due to paralysis. He laid stress on the fact that similar disorders occurred in syphilis without prior paralysis.—*Brit. Med. Journ.*, Dec. 7, 1878.

Quinine Rash.

It is well known that certain medicines, when internally administered, especially in individuals with a particular predisposition, may give rise to eruptions on the skin of various kinds, most frequently of an inflammatory nature, or else with the character of a simple fugitive hyperæmia, though, as in the case of the eruptions excited by bromide and iodide of potassium, there may be pulsation. These eruptions, in addition, to their unpleasantness, are liable to be mistaken for the eruptions of actual disease, and thus those which follow the use of bromide and iodide of potassium have been diagnosed as syphilides or varicella, copaiba-rash as measles or the early stage of smallpox, and belladonna-rash as scarlet fever. It has lately been discovered that a drug which is in extensive daily use—viz., quinine—may in certain cases (which, however, are probably somewhat rare) produce an eruption closely resembling in many of the symptoms an attack of scarlet fever. In proof of this, Professor HENRY KÖBNER, of Breslau, reported

in the *Berliner Klinische Wochenschrift* the following remarkable case, to which he was called in consultation on November 19, 1876: A sister in a convent at Meran was ordered quinine on November 7, by her medical man in the course of an attack of bronchitis—an affection to which she was subject. Two hours after taking it she had a severe rigor, which was followed by a feeling of suffocation and by severe headache, nausea, and vomiting. About four hours after taking the medicine—namely, at midnight—she had a second shorter rigor, immediately followed by an annoying sensation of burning, which began in the head, and quickly spread down over the whole body. The next morning the patient was very feverish, and was covered with an eruption which burnt and itched, while at the same time she complained of difficulty in swallowing, and of a feeling of dryness in the throat. When Professor Köbner saw her, he found the general eruption of an even dark-red tint, which covered the whole body even to the hairy scalp and the hands and feet. It disappeared on pressure for the moment. There was slight swelling of the face and eyelids, especially the lower. The conjunctivæ were injected, and the mucous membrane of the nose was dry. The flexor surface of the lower third of both thighs was normal, but on the extensor side there were a number of slightly raised dark-red isolated papules of the size of a pea, with healthy skin between them. The pulse was 108, rather full. The temperature of the skin was raised to the touch (the thermometer was not used); the breathing was quiet. The tongue was moist and thickly coated except at the tip; the posterior wall of the pharynx was dark-red and covered with numerous dilated bloodvessels and a little mucus; but the palate, tonsils, and all the rest of the mucous membrane of the mouth, were normal. The urine was tolerably abundant, reddish, clear, and free from albumen or any sediment. Bowels confined. Owing to the appearance of the face and neighbouring parts, and to the fact that the patient had had similar attacks before, Professor Köbner's first idea was that this might be an *erysipelas migrans*; but this was soon abandoned, owing to the rapidity with which the eruption had invaded the whole body, to the absence of a sharp border anywhere, and to the relatively slight fever and general depression present when compared with the extent of the eruption. His second thought was that it was scarlet fever, to which the eruption had a striking external resemblance, not only in its colour, but also in its distribution. The symptoms which preceded its outbreak were also in favour of the latter disease, and, although the origin of the infection could not be traced, yet it was quite possible that one of the other sisters, whose duties brought them into contact with the sick, might accidentally have introduced the disease into the convent. Against scarlet fever, however, there were the following facts, which seemed to absolutely negative the possibility of its existence: 1. This was the third attack within about five months. 2. The tongue did not present its usual appearance in scarlet fever, nor was there any inflammation of the soft palate, the palatal arches, or tonsils, whereas the posterior wall of the pharynx was *alone* affected, which is never the case in scarlet fever. 3. The frequency of the pulse was too slight for scarlet fever at its acme. 4. The redness had involved the whole surface of the skin too rapidly, and the incubative stage had been too short, the first symptoms of the disease having only preceded the outbreak of the eruption by about two hours. 5. The appearance of fine folds over the papules on the thigh suggested the idea that the rash was beginning to fade; and lastly, The papules on the thigh were found not to be connected with the hair bulbs as in papular scarlet fever affecting that region, nor to have the form of wheals such as are not uncommon in scarlet fever; on the contrary, they closely resembled part of a polymorphous erythema at the commencement of involution. For these reasons, and from the recollection of some somewhat similar but slighter cases of eruption following the

use of drugs, Professor Köbner gave as his diagnosis *erythema exudativum universale ex usa quinia*. The patient was ordered a purgative, which greatly relieved her, the fever rapidly disappeared, the pulse fell to 80, the eruption became paler, and fine scales became visible upon the face. On November 12, when Professor Köbner saw her again, her whole face appeared as if powdered white from the number of tiny scales which covered it. On the scalp there were also abundant scales. The eruption had completely disappeared from the trunk and limbs; but there were no scales as yet on those parts, though they appeared afterwards. In other respects the patient was also much improved. On further inquiry it appeared that on June 16, 1876, the patient had had a similar, but much more severe, attack, which was regarded as severe scarlet fever, and in which the general eruption lasted eight days. The temperature rose as high as 39.8° C., and the pulse to 124. There was delirium, and on the ninth day copious desquamation, exactly resembling that of scarlet fever, set in and lasted several weeks, large flakes of epidermis being detached from the hands and feet. Here the eruption followed a dose of 0.225 gramme quinine given for a bronchitic attack, and the whole quantity of quinine taken during the illness was 1.275 grammes, or scarcely twenty grains. On September 9, the unsuspecting practitioner, who had attended her before, being called in for a fresh attack of bronchitis, ordered her some more quinine with a little digitalis. She took only two pills, each containing 0.075 gramme quinine, when the eruption again appeared, and ran its course with desquamation as before, only in a much shorter period and milder form. Although in each case the quinine had been given in combination either with digitalis or Dover's powder, it alone had been given in all the three attacks; and in each case the violence of the outbreak, as well as its duration, had been proportional to the amount taken; besides which the most careful inquiries among the medical men in Meran failed to elicit the fact that any sample of quinine obtained from the chemist who had supplied it to the above patient had ever been known to produce similar effects in other cases.

Although it is certainly rare for quinine to produce the train of symptoms which occurred in Professor Köbner's patient, yet similar cases have been recorded, and no doubt many others have been misinterpreted. Professor Köbner in his lecture refers to a medical man at Breslau who had suffered from repeated attacks of what he supposed to be erysipelas of the face and scrotum, and who at last discovered that they were all caused by quinine. After taking a single dose of one gramme for facial neuralgia he had a rigor, followed by fever and delirium, and by symptoms of pulmonary congestion, which led to the application of cupping-glasses to his back. The rash lasted four days, and there was abundant desquamation; nor was he able to resume his practice for three weeks. Similar cases (all in women) have been reported in our contemporary, the *British Medical Journal*, October 9, November 13, 1869; January 8 and 29, 1870, by Messrs. Skinner, Hemming, Lightfoot, and Garraway, and by v. Heusinger of Marburg (*Berliner Klinische Wochenschrift*, June 18, 1877). The rash was nearly always general, but in one or two instances was confined to the face, and the desquamation lasted in one case for three months.

The clinical importance of the quinine-rash is due to its great resemblance to that of scarlet fever—a resemblance which has struck all its observers and imposed on some.

Besides those points which were referred to above, and on which Professor Köbner relied in making his diagnosis, there are two or three others which have considerable value. Thus, the swelling of the face and arms, which sometimes occurs quite early in the attack, deserves attention; and the use of the thermometer for twenty-four hours will exhibit very different fluctuations of tempera-

ture from those of scarlet fever. If the case is seen early enough, and the urine can be examined within a period not exceeding thirty-six, or still better twelve, hours after the attack begins, quinine may be detected in it, either by Brigue's solution, modified by Binz (iodine two parts, iodide of potassium one part, water forty parts), which will detect from one-forty-thousandth to one-fifty-thousandth part of quinine; or by Kerner's fluorescence reaction (described in Neubauer and Vogel's *Anleitung zur Harnanalyse*, vii., Auflage, 1876), which consists in adding a concentrated solution of nitrate of mercury to about thirty to fifty cubic centimeters of urine until no further precipitate occurs, filtering and washing the precipitate. If quinine be present in any quantity, wash-water will fluoresce in ordinary daylight; but if the amount be very small, a special instrument is needed to see it.

Quinine is not the only drug which can produce an eruption, such as the patient at Meran and the others we have mentioned suffered from. In one of the latter cases (Skinner's) 0.0004 gramme strychnia (an alkaloid which, like quinine, passes unaltered into the urine) gave rise to a precisely similar eruption to that which at three previous periods had resulted from the use of quinine. Chloral hydrate which, as is well known, sometimes occasions an erythematous or urticarious rash, in others, as in an instance mentioned by Professor Köbner, has produced a general scarlatinous erythema which terminated in protracted desquamation of large epidermic lamellæ. There seems reason also to believe, from two cases reported by Traube, that digitalis can produce precisely similar symptoms, although Traube himself did not consider the fact as completely proved. The digitalis-rash differs from the foregoing, and from that caused by all other drugs which are at present known to produce an eruption, in the following points: 1. In both cases it appeared several days (in one three, and in the other four) after the digitalis had been discontinued; and 2. The feverish symptoms do not necessarily run parallel with the development of the eruption, but the latter may diminish and disappear while the temperature continues to rise.

As to the *rationale* of the action of quinine in the above cases, Professor Köbner believes that it is due to a true intoxication or poisoning, and not merely to a reflex dilatation of the cutaneous bloodvessels, induced by a stimulus from the gastric mucous membrane. He recalls the fact that an erythema is an occasional incident in belladonna-poisoning, and points out that an incubative period of about two hours preceded the rigor in all the cases. A peculiar sensitiveness on the part of the individual undoubtedly plays a part in the production of these peculiar symptoms, for doses which ordinarily exert no perceptible effect except that of an antipyretic or roborant here gave rise to violent illness. Professor Köbner believes that the erythema and subsequent desquamation are due, not to a simple vascular dilatation in the skin of nervous origin, but to a direct irritant action of the drug, through the blood, upon the tissues of the skin. It is very unlikely that drugs with such different effects on the nervous centres as quinine, strychnia, chloral and perhaps digitalis, should all produce the same effect through vasomotor agency. Further, he shows that the prolonged use of chloral may be followed by petechiæ, and even by gangrene of the skin, probably from the local perversion of nutrition which it excites, and still further clinches the argument far beyond by mentioning a case in which a copious general eczema was excited not only by external irritants, such as mercurial ointment or solar heat, but by a large dose of quinine taken by the patient during an attack of intermittent fever.

We have entered at some length into the details of these medicinal eruptions, and into Professor Köbner's remarks on them, to draw the attention of practitioners to them. We cannot help thinking that a number of so-called anomalous examples of skin disease may be explained by reference to such agencies, and that

the key to some cases of so-called "exudative dermatitis" or "ptyriasis rubra," and possibly of others which have been described as "erysipelas," will be found here. "Recurrent scarlet fever" must henceforth be carefully examined, to see whether it is not explicable by the specific poison of quinine.—*Medical Times and Gazette*, Nov. 23, 1878.

Pyrogallic Acid in Psoriasis.

Dr. A. JARISCH (*Pharmaceutische Post*) reports his complete success in the treatment of psoriasis by pyrogallic acid. At first he used an ointment, containing 20 per cent. of pyrogallic acid; this was, however, found to produce excoriations. Hence he has reduced the ointment, as ordinarily used, to the strength of 10 per cent., and in some cases he uses it only of 5 per cent. If spread on muslin, and then applied, it must be still further diluted, otherwise it acts as an irritant. Aqueous solutions should contain about 1 per cent. Pyrogallic acid acts not as rapidly as chrysophanic acid, but it is equally certain in its results.—*London Med. Record*, Dec. 15, 1878.

Scleroderma.

Dr. RADCLIFFE CROCKER, at a late meeting of the Clinical Society of London, showed a case of this disease which was under Dr. Eustace Smith at the East London Hospital for Children. The patient was a girl aged 13, admitted into hospital on August 22d. The mother died of phthisis. The patient had acute rheumatism four years previously. Two weeks before admission, she complained of rheumatic pains in her arms, which were rubbed with liniment, and the skin was then noticed to be hard. The induration spread over nearly the whole body, and, on admission, the whole face appeared swollen, especially beneath the lower jaw, where glands were enlarged all around. There was a fixed expression, and the face was pale; on touching her, the skin was found as hard as frozen fat; it did not pit on the firmest pressure, and felt thickened and fixed to subjacent tissues, so that it was impossible to pinch up a fold. Similar induration affected the whole skin of the body, except the palms, soles, and eyelids. In the mouth, the mucous membrane of the right cheek was affected, but not that of the left, nor the tongue; her mouth could be opened fairly without pain, but the tongue was protruded with difficulty. The induration was most marked on the flexor surfaces, the skin being shortened so that the limbs were more or less bent, and on the forearms having the appearance and feel of cicatricial bands across the joints, preventing extension beyond a right angle, but permitting some flexion. Forcible attempts at straightening produced pain. The abdominal walls were as rigid as in permanent tetanic spasm. There was no pigmentation. The lungs were healthy, but there were a faint pericardiac friction and a mitral regurgitant murmur. The temperature was 101 deg.; pulse 116; and respirations 20. On August 27th, the signs of pericarditis were more marked; but there was some diminution in the induration on the legs, and the tongue could not be protruded. On September 11th, pitting on pressure was noticed in the face; and, on the 27th, the face was a little smaller, and more expression observable; but the temperature went up to 105 deg., with renewal of pericarditis. On October 28th, there was another attack of pericarditis, with a temperature of 104.5 deg., and it was not quite normal till November 27th. At present, there was distinct diminution of induration over the face; the skin could now be pinched up with some difficulty; the hardness was nearly gone over the upper part of the ears and back of the hands, and the fingers were quite restored. The feet and legs were also improved, except the front of the thighs. There were still pericardial friction and an open systolic murmur. Noticeable features in the case were the rapid onset,

the process being complete in less than a fortnight; the almost universal diffusion of the induration; the association with acute rheumatism and cardiac disease; the repeated attacks of pericarditis; the high temperature and œdema. The pyrexia was associated with the renewal of pericarditis, and possibly the caseous cervical glands were responsible for the œdema. Upwards of one hundred cases of scleroderma were now on record since Thirial wrote upon it in 1845, in all of which the diagnosis was undoubted. Marked symptoms were: insidious commencement; induration and immobility of the skin, widely diffused and most marked on the flexor surfaces, crippling the movements of the joints; absence of fever, except from complications; chronic course; general thickening in early stage, but no elevation above the surrounding parts; non-fatality by itself, and tendency to improvement or to undergo shrinking and produce atrophy of the parts beneath from pressure, while treatment exercised slight influence over it. Other common but not invariable features were its tendency to attack the female sex, and begin either at the back of the neck, or on the forearms; its occurrence in early or middle life; the frequent association of acute rheumatism either some time before or immediately preceding, or even accompanying, the scleroderma, as in this case, with valvular heart disease sometimes dependent on the acute rheumatism, sometimes not; pigmentation, especially near the sebaceous follicles, which might precede or follow the induration and the occurrence of ivory-like patches. The histology consisted mainly in the increase of the connective elastic involuntary muscular tissue in the corium, disappearance of the fat with increase of fibrous stroma. Groups of cells were always found in the deeper layers of the cutis and fatty tissue, especially in the neighbourhood of the sweat-glands. The prognosis was good as regarded life. The induration might entirely disappear, but more often some parts improved while others did not. Even when it had undergone considerable contraction, some increased mobility, under the diligent employment of friction with oil and honey, might sometimes be obtained.—*British Med. Journal*, Dec. 21, 1878.

Surgery.

Carbolism in Burns.

Dr. PAUL BOYDT has observed (*Bulletin Général de Thérapeutique*, Oct. 15), in the service of M. Verneuil, the happy effects obtained by the surgeon in treating extensive burns with carbolic acid. From the cases he has himself seen, and from those which Busch of Bonn has made known, Dr. Boydt has arrived at the following conclusions: 1. This plan of treatment moderates the inflammation which accompanies the elimination of the eschars. 2. Certain formidable complications, such as acute septicæmia, purulent infection, etc., are prevented. 3. The suppuration is diminished. 4. As concluded by Dr. Busch, those parts only are eliminated which have been destroyed by the heat, and the cicatrix is admirably smooth and extensible.—*London Med. Record*, Dec. 15, 1878.

On the Treatment of Ganglion.

A case is reported (*Berliner Klinische Wochenschrift*, No. 34, 1878) by Dr. J. PAULY, of Posen, of a young woman aged 19, who had a hard tense bursal swelling of the size of a cherry, situated in front of the right wrist and over the lower end of the radius. This growth had existed for one year, was increasing in size,

and impairing more and more the use of the hand. The ether-spray having been applied, and the extremity rendered bloodless, an incision was made over and into the tumour; and, after the viscid fluid contents had been discharged, the thick cyst-wall was dissected away. In the course of the operation, a communication was discovered between the interior of the ganglion and a sheath of a tendon. The operation was performed under antiseptic conditions, and the wound was dressed and drained according to Lister's method. The radical operation on ganglion, the author states, was, with former methods of treating wounds, extremely risky. The pedicle of the ganglion is sometimes hollow, and the interior of the sac, in such case, may communicate either with the neighbouring joint or with the sheath of a tendon. The presence of such communication, which favours Gosselin's view, that a ganglion consists in the enlargement and distension of a pre-existing detached sac of synovial membrane, accounts for the painful, violent, and spreading inflammation and suppuration consequent on free incision, which often leads to permanent rigidity of the joint, and according to Hyrtl, may even have a fatal termination. The earliest subcutaneous operations were performed by Richter on these forms of bursal swelling.

Thanks to the antiseptic method, according to Dr. Pauly, it is immaterial to the surgeon whether the ganglion communicate or not with a joint or synovial sheath, since with the application of such method the tumour may be incised and extirpated without danger. Constriction of the seat of operation, after Esmarch's plan, not only prevents any hemorrhage during the use of the knife, but also enables the surgeon to recognize distinctly the parts under dissection, and favours very much the action of the ether-spray in producing absolute local anæsthesia.—*London Med. Record*, Dec. 15, 1878.

On the Treatment of Purulent Collections by Injections of Salt Water.

L'Union Médicale, for October 1st, contains an account of a communication on this subject made at a recent meeting of the medical section of the French Association for the Advancement of Science by M. HOUZÉ L'AULNOIT, of Lille. The difficulty which is experienced in evacuating pus accumulated in cavities is well known, more especially in the pleural cavity. These difficulties M. Houzé de l'Aulnoit met with, in a marked degree, in a case of purulent pleurisy which he had had under treatment, and in which, although the empyema had been punctured nine times and the most varied washes were employed, no result had been attained. As he was searching for an efficient antiseptic, that is to say, following the definition of M. Gubler, a body having a higher density than that of pus and acting upon the lower organisms in a destructive manner, yet quite inoffensive with regard to the human organism, he thought of a concentrated solution of chloride of sodium, the density of which is greater by one-sixth than that of pus, and which should be effectual in raising the pus and bringing it to the surface. Success justified these theoretical views. The salt injection turned out a large quantity of pus which had before resisted the washes, and the healing was complete and lasting. M. Houzé de l'Aulnoit did not rely upon this case only; he had also others—another case of pleurisy, three of deep abscesses of the abdomen, two of the iliac fossa, one with pelvic excavation, a fracture with a purulent abscess, an osteitis of the epiphysis of the tibia, etc. He would not dwell upon these facts, as they would before long be published elsewhere, in a thesis, by one of his pupils. These means, which had been so successful in purulent abscesses, had also been applied in the treatment of wounds. This application of salt was not mentioned except in the work of M. Rochard: it had been held in high esteem for hospital use in Antwerp by M. Dewandre, and the practice had

been eulogized by M. Latour. M. Houzé de l'Aulnoit thought that salt has a multiple action, exercised upon the walls of the cavity, upon the red blood-corpuscles, and upon the leucocytes; it possesses also a special nutritive action. The beautiful experiments of M. Boussingault upon this point are well known; salt excites assimilation; by a sufficient proportional augmentation in the food of animals, they were seen to fatten. If the remedy was employed for the sake of its density, it was necessary to use a solution; in some cases good results had been obtained by a solution of 100 to 200 grammes to the litre. These injections caused little pain, less than those which had been made with alcohol and water.

M. POTAIN added a case to those already quoted; an hydatid cyst of the liver, with abundant suppuration, treated by this method had terminated favourably. He thought that the employment of salt had been so much neglected because, perhaps, it was considered a housewife's remedy. M. Dupré, in analogous cases, had used salt mixed with sulphate of zinc. M. Cabello Bruller had employed sea-water with very good results. M. Rochard had been led to conclusions opposed to those of M. Cabello. His navy colleagues and himself knew that small wounds, under the influence of sea-water, were endless excoriations. With regard to sea-water being employed for injections, he could not express an opinion, not having used it for the purpose. M. Lecadre was aware of the bad effects of sea-water upon wounds, but thought that sometimes, in certain affections, it was serviceable, especially in slight conjunctivitis. M. Houzé de l'Aulnoit thought that the inconvenience caused by sea-water in the treatment of wounds was due to the small quantity of sand that it contained; this was also present in the gray salt; for that reason he never employed anything but the perfectly white salt.

In a contribution to the *Lancet*, October 12th, Dr. de Haviland Hall recommends salt water as a nasal douche in cases of ozæna, the strength being three tablespoonfuls of the salt to a pint of tepid water.—*London Med. Record*, Nov. 15, 1878.

Rodent Ulcer.

An instructive debate on Rodent Ulcer, or Rodent Cancer, took place at the Pathological Society last Tuesday evening and very diverse views were expressed as to the pathology of this malady. Most of the authorities agreed as to the clinical features of rodent ulcer. Mr. Hutchinson, to whose labours and observations much of our present clinical knowledge on the subject is due, regards the most typical form of the disease as occurring on the upper half of the face. An ulcer, he argues, occurring above a line drawn from the lobule of one ear across the face below the nose to the other ear, would be a rodent ulcer, and not an ordinary epithelioma. In other words, such a sore would be much slower in its growth, less proliferative on its surface, and unlikely to infect the neighbouring lymphatic glands. Sir James Paget, Messrs Hulke, Lister, and many other authorities, mention cases of rodent ulcer, typical in all its characters, as occurring on other parts of the body besides the face. Thus we are led to conclude that, although it usually commences on the face, and there runs its most typical course, yet that other parts of the body are not exempt from its invasion. It may be that, on the face, morbid tendencies to this peculiar form of disease are intensified by exposure to those irritating influences, which, by common consent, enter so largely into the etiology of its onset.

In calling to mind the history of many cases which we have been able to observe in the practice of Mr. Hutchinson and other surgeons, we are struck by the similarity of the original starting-point of the disease—a small, soft wart on some part of the face or forehead, which has existed as long as the patient can

remember. This may have been "picked" over and over again; indeed, it becomes almost a habit with the patient to pick off the scab as often as it naturally reforms. In this way a process of constant irritation—Mr. Hutchinson, we believe, would call it cultivation—is kept up; next, when the middle period of life is past, this wart begins seriously to ulcerate, and now, for the first time, to receive a little attention. It is, however, by this time a cancer to all intents and purposes, and, unless vigorous measures be adopted, will sooner or later destroy the patient. It would be useless to speculate on the changes which may have taken place in the proliferative process; clinically we know that something has been going on for years which has remained a merely local and exceedingly limited process. But, without any further or increased stimulus, a new process of activity is set up, which tends to spread indefinitely, to invade any structure with which it comes in contact, and even finally to kill the patient. For an explanation we fall back on constitutional peculiarities, often without being able to appreciate or detect any such; but though age will certainly account for some modifications of constitution, it does not seem to us to account sufficiently for the great changes which must take place in the life-history of one of these early soft warts, before it assumes the characteristics and the dangerous tendencies of a well-marked rodent ulcer. We should, from analogies, rather incline to think that the bodily constitutional proclivities, like mental ones, would be the more active during early manhood, and less so when the body and the mind, as in old age, are tending to decay. Such reflections may not be without their value; but as clinical facts go far to show that this disease at one time of its history is very largely a purely local one, it behooves surgeons to utilize the opportunity and freely remove it while there is yet a fair chance of doing so with success.

The debate also confirmed an interesting fact, which was well recognized before; that a disease which one surgeon would call rodent ulcer might be regarded by another as epithelial cancer.

Coming to the pathology of the disease, opinions were found to differ very widely. Dr. Tilbury Fox showed some very beautiful sections, together with drawings of the disease, and read a short paper on the subject (on which the debate ensued). He endeavoured to demonstrate that the disease took its origin, for the most part, in the outermost layer of the hair root-sheath, the layer corresponding with the rete mucosum of the skin. Dr. Thin argued that the diseased process commenced in the sweat-glands—that it was indeed an adenoma of the sweat-glands. Mr. Howse and Mr. Golding-Bird could discover nothing but collections of lymphoid cells (leucocytes) immediately below and in the rete Malpighii. Mr. Parker had not been able to detect any well-marked histological characteristics in rodent ulcers which were not present in epithelial cancers, and *vice versâ*. There is here really less divergence of opinion than seems to exist at first sight. We agree with Dr. Fox in believing that changes do take place in the hair-sheaths—it would be quite remarkable if changes did not take place there; but we are unable to agree with him that his specimens conclusively prove that the disease commenced in these sheaths, and nowhere else. Dr. Thin's observations of changes in the sweat-glands cannot reasonably be doubted; and our own observations accord with speakers who had found a very similar histological condition in rodent ulcer and in epithelial cancer. In the latter disease, authorities, we believe, are agreed that extensive proliferative changes occur in all the glandular elements of the skin; and hence we are driven to the assumption that the discrepancies in opinions expressed the other night are due to differences in the individual specimens examined, or the stage of the disease, or the point whence the sections are cut, rather than to any more radical divergence. Of course the question as to the exact seat of the very earliest disease remains

unsettled, and we should think that it is likely to remain so. It does not seem probable that the disease commences always in the same situation and in the same manner, for these cases present well-marked variations within certain given limits, and it would be contrary to our ordinary ideas to look for a common origin under such circumstances.

Microscopical science has done much to advance scientific surgery; but it must work hand-in-hand with clinical observation. Most pathologists would agree, we think, that the mere microscopic examination of a tumour would at best give but a poor idea of its real nature. On the contrary, clinical observation may very safely be brought to bear on the explanation which various histological appearances are to receive after microscopic examination. In the case of rodent ulcer, some of our best authorities now agree to classify it among the cancers, and the outcome of the remarks at the Pathological Society last Tuesday seems to indicate that its histological characters do bear out and give support to this view.—*Med. Times and Gazette*, Dec. 21, 1878.

Thermocautery in Tracheotomy.

At a meeting of the Surgical Society in Paris, October 9th, M. de Saint-Germain opened a discussion on the employment of the thermo-cautery in tracheotomy. He had assisted M. Krishaber at five operations performed by the aid of this instrument, and he should not hesitate himself to use the cautery if called upon to open the trachea. In the first case there was free hemorrhage, but it was arrested by sponges only; in the second very little blood was lost, and the wound was large. In the three other cases the wound was nearly linear. Ligatures had not been required, as the bleeding could be arrested by touching the vessels with the point of the instrument.

M. Anger stated that he was hastily summoned in the winter to a tracheotomy case at the Hospital Beaujon. M. Barthelémy, the interne, operated. The thermo-cautery was employed until the trachea was reached, and there was no inconvenience from bleeding. The windpipe was opened with a bistoury, but a clot of blood then appeared. M. Anger suspected that the posterior wall of the trachea had been incised with the knife. The necropsy on the following day demonstrated the truth of this hypothesis.—*London Med. Record*, Dec. 15, 1878.

Operation for Empyema.

Dr. KOENIG describes (*Berliner Klinische Wochenschrift*, October 28) a case of empyema on the left side, in which he removed two litres (three and a half pints) of fluid by opening the thorax and pleural cavity. The case was of nine months' standing, and there was lateral curvature of the spine to the right, so that the ribs on the affected left side were closely approximated, thus rendering it necessary to remove a portion of the rib. After the removal of the pus, the cavity was washed out with a tepid solution of salicylic acid, and this was facilitated by somewhat raising the patient repeatedly by the legs (the opening had been made on the side at the sixth rib). The wound was treated antiseptically by Lister's bandage, drainage-tube, etc., but no carbolic acid was used, and the case terminated in complete recovery.—*London Med. Record*, Dec. 15, 1878.

Removal of a Foreign Body from Colon by Laparo-enterotomy; Recovery.

Dr. C. STUDEGAARD, of Copenhagen, begins an interesting paper (*Hospitals-Tidende*, July 24, 1878) with some remarks on the introduction of foreign bodies

by the mouth, and their removal from the stomach by operation; and proceeds as follows.

Far more rarely than through the mouth, a foreign body is introduced into the intestine through the anus, sometimes accidentally in falling, sometimes voluntarily for different reasons, the true nature of which it may be difficult to ascertain. Perforation of the rectum, with its consequences, easily occurs in traumatic cases; in the others, the rectum is more or less completely obstructed, and the foreign body may generally be removed by some manual operation or other, when it is not expelled by tenesmus or carried out with the excrements. Examples of this are now and then found in the periodicals, and it seems to be a common occurrence in France to introduce *per anum* glass vessels of various sizes. Four cases of extraction of such are known to me, related by Velpeau, Maisonneuve, Morel-Lavallée, and Nélaton. In the Museum of Anatomy and Pathology at Copenhagen is a longish oval flat stone, about $6\frac{1}{2}$ inches long, $2\frac{1}{2}$ inches wide, $1\frac{1}{2}$ inches thick, and weighing nearly two pounds, which a patient in Bornholm introduced into his rectum, to prevent prolapse, from which he had for a long time suffered. The stone was extracted by a surgeon, Frantz Dyhr, in 1756. In quite exceptional cases the foreign body glides so high up that it lies in the sigmoid flexure or even in the transverse colon; and I will now relate the three only cases of this kind which I have succeeded in finding, in order to compare them with a fourth, which I myself have had the opportunity of treating.

1. Reali operated in 1849, in the hospital at Orvieto, on a peasant who nine days previously had introduced a piece of wood into the rectum, for the purpose, as he said, of economizing his food, and preventing it from passing out too quickly. He had violent pain. On exploration, the finger could feel the base of the piece of wood lying in the hollow of the sacrum, and surrounded by the broken mucous membrane. As repeated attempts at extraction led to no result, Reali made an incision in the right iliac region, and found that the foreign body lay in the sigmoid flexure, which it had dilated and pushed to the middle line nearly as far as the umbilicus; he incised the intestine, removed the foreign body, and closed the intestinal wound by Jobert's method. The patient was treated by purgatives (!) and had entero-peritonitis and abscess in the iliac fossa, but recovered, and two years afterwards was in perfect health. The foreign body was a piece of chestnut wood of the shape of a truncated cone, 10 inches long, and about $3\frac{1}{2}$ or 4 inches in diameter.

2. A little case with very ingenious housebreaking and other thieves' instruments was found by Dr. Closmadeuc at the necropsy of a man in the prison at Vannes. The man had died of acute peritonitis, from which he had suffered seven days. During his illness, a hard, rather large body was felt in the left side of the hypogastrium; he said that it was a piece of wood containing money, which he had introduced into the rectum; this, on exploration in the meantime, was found empty. On section, the case, which was cylindro-conical in form, lay in the transverse colon, with its apex directed towards the cæcum; it was of iron, and was wrapped in a piece of lamb's mesentery; it weighed about 23 ounces, was about $6\frac{1}{2}$ inches long and $5\frac{1}{2}$ in circumference, and contained thirteen tools and some coins. Such tricks of criminals are well known to jailers, who are aware that prisoners are accustomed to hide articles in the rectum; but they are usually introduced with the large end upwards, and the passage into the transverse colon, Closmadeuc thinks, may be explained by the fact that the foreign body was introduced with the small end upward.

3. Ogle related the following case in 1863, at a meeting of the Royal Medical and Chirurgical Society of London. In a young man aged 17, there was found a swelling of the size of two eggs under the right false ribs. After sixteen days

there escaped *per anum* a stick ten inches long, which, the patient said, had been introduced into the rectum four months previously.

The fourth case belonging to this category is the following, which I treated in the Communal Hospital.

Hans F., a servant-man, aged 35, was admitted on January 10, and discharged cured on April 16, 1878. The day before his admission he had introduced into the rectum an empty truffle-bottle, with the open end upwards, with the object, as he said, of stopping a diarrhoea. On the morning of the 10th he felt severe pain in the hypogastrium, and sought medical aid. Chloroform was given, but the bottle, which before the narcosis could be felt in the rectum, passed higher up, and he was brought to the hospital. He was exhausted by the journey and by the constant pain, and had a single slimy stool. The bottle was felt in the hypogastrium (which was somewhat distended) lying to the left of the middle line, with its lower end close over the horizontal ramus of the pubes. In the evening profound narcosis was induced, and the rectum was divided posteriorly, and the hand was introduced as far as the sphincter tertius, which presented greater resistance than one could venture to overcome; and, as the bottle could not be recovered, an attempt was made externally to push it down, but it came in front of the rectum surrounded by a portion of intestine. Laparo-enterotomy was therefore at once performed antiseptically. An incision about four inches long was made in the linea alba, from the umbilicus downwards; a loop of intestine, which appeared to be a part of the sigmoid flexure, protruded with the neck of the bottle foremost; an incision was then made over the mouth of the bottle and down the neck and it was slowly withdrawn. The surrounding parts were protected by sponges and compresses against the escape of feces; and, after the intestine had been cleansed, the wound in it was united by twelve or fourteen catgut sutures, which for safety, were tied with three knots. The gut having been replaced, the wound in the linea alba was united by eight silk sutures. The operation lasted one hour.

The bottle (of which a full-sized representation is given) measured $6\frac{1}{4}$ inches in length, 2 inches in diameter at the base, and $1\frac{1}{4}$ inches at the upper end. The mouth was broken, the fracture being apparently of old date, leaving a gap about one-fifth of an inch wide, and as deep, with sharp edges. Recovery was slow, and the prognosis was for a long time doubtful, on account of local peritonitis and formation of abscesses, which opened partly through the incision in the linea alba and partly through the rectum. Two days after the operation, flatus began to escape *per anum*; on the eighth day his bowels were spontaneously opened, and on April 16 he was discharged cured, without a trace of pus. The sphincters had for some time performed their functions normally.

Several points in the history of this case demand closer inquiry; and the earlier recorded cases of a similar kind may, in certain directions, furnish materials to aid in its correct appreciation. With regard to the motive for the introduction of the foreign body, it certainly cannot be denied that the patient's statement was true—that the bottle was intended as an obdurator, and perhaps also as a receptacle for the excrements.

It will next be interesting to ascertain why the bottle passed up into the sigmoid flexure, seeing that, shortly before this, it was felt by a medical man in the rectum. Although it may readily be supposed that, during the repeated and ineffectual attempts at removal that were said to have been made before anæsthesia was induced, the bottle might be forced higher and higher up instead of being brought down, I nevertheless think that there must have been quite another factor. The three articles found in the sigmoid flexure and colon—the bottle, case, and piece of wood—were all more or less conical, and in all three cases the for-

eign body was introduced into the rectum with the smaller end upward. I think that the passage upwards must have depended on the contraction of the circular muscular fibres, caused reflexly by the irritation of the foreign body, and that the contraction acted most powerfully on the lowest and greatest circumference, and thus pushed the body higher and higher up, by an abnormal and antiperistaltic action. That the cause of this may be most readily sought in the peculiar shape of the foreign body, and in the manner in which it dilates the intestine, is confirmed by the reports from French prisons, in which it is stated that cases of thieves' tools can nearly always be pressed out of the anus when they have been introduced with the broad end upwards; also by the fact that the upward wandering has been observed in only a few cases; in the majority of cases, foreign bodies introduced *per anum* remain in the rectal pouch until they are expelled or extracted.

Finally, a doubt may be thrown on the propriety of operating on the patient, as some may be of opinion that an operation was on the whole, not indicated; others, that it should have been deferred. On this I may remark, that it was indeed contemplated to attempt extraction by the introduction of the hand into the rectum by Simon's method; this was attempted, but was found impossible; for I could not succeed in passing more than the tips of two fingers through the sphincter tertius in the region of the promontory of the sacrum, which was easily reached, as the rectum was divided backwards in the middle line as far as the point of the coccyx, and the resistance was so great that I did not venture to force the narrower part. Simon's statement that three or four fingers can be passed through the upper part of the rectum and a little way into the sigmoid flexure, is scarcely correct in general; at the least, I have often been obliged to abstain therefrom on account of the great resistance, notwithstanding the comparatively small circumference of my hand. It is possible that the resistance which I encountered lay in the circular spasm, which also prevented the bottle from slipping down into the rectum when pressure was applied externally; but its pressure downwards in a loop of intestine may also be explained by supposing that it had already reached some way into the sigmoid flexure, and that the pressure is more readily made in a direction downwards and forwards than downwards and backwards on a long solid cylindrical body lying in the long axis of the hypogastrium. Fortunately, this attempt was soon given up, for, as was afterwards shown, the upper circumference of the bottle was broken, and stronger pressure on it might easily have produced a penetrating wound of the intestine. There remained only the alternative of letting him run the risk of laparo-enterotomy, or of waiting; and I decided for the first, on the following grounds. It seemed to me far more probable that the foreign body would produce peritonitis, with symptoms of ileus, than that it should be expelled by peristaltic action; moreover, I assumed, and still maintain, that it was pushed up by active muscular contraction; and that the passage of so large a body from the abdomen by local inflammation and ulceration would expose the patient to at least as great danger as would an artificial incision, might well be assumed; just as it depended on mere accident whether the resulting peritonitis would remain local. I therefore preferred immediate laparo-enterotomy, and chose to go in the linea alba, as in ovariectomy, instead of making an incision over Poupart's ligament, partly on account of the ease of healing, partly because, a short time previously, in making an artificial anus in the sigmoid flexure in a case of cancer of the rectum, I noticed how little room an oblique incision gives, in consequence of the course of the fibres of the oblique muscles.

With regard to the treatment of the operation-wound, Lambert's intestinal suture (inversion of the edges of the wound so that the peritoneal surfaces lay

in contact) was preferred on the ground of simplicity. Of the advantages and disadvantages of operating antiseptically by Lister's method when the peritoneum has to be opened, I defer speaking until another opportunity; I will only say here that I believe I have seen the use of it in enterotomy.

The results of the four cases in which foreign bodies passed up from the rectum into the large intestine have been as follows: one recovery after spontaneous expulsion (Ogle); one death from peritonitis without operation (Closmadeuc); two recoveries after laparo-enterotomy (Reali and Studsgaard).

An account of his case was sent by Dr. Studsgaard to the Société de Chirurgie in Paris, and read by M. Tillaux at a meeting on October 9th.

M. TILLAUX thought the author had done rightly, that the operation had been indicated, and success had crowned the effort. He knew the gravity presented by foreign bodies in the intestine, and he remembered a case he saw last year where a man had introduced a bougie into his rectum. The first day the efforts at extraction had been ineffectual, but the next day the body had been removed. Nevertheless the patient died of peritonitis, and at the necropsy a small wound of the intestine was found, brought about by the pressure of the extremity of the bougie.

M. VERNEUIL said this report raised many important questions. It was well known that the mortality was great in cases of foreign body in the intestine. Certainly it could be expelled by the natural passage, and too great haste on the part of the operator was hurtful. It was also certain that its presence would provoke the formation of an abscess, which would burst, and the foreign body be discharged with the pus; but oftener it was necessary to interfere directly to cause its expulsion. This intervention should not be to the extent that was formerly supposed. One of his pupils last year had written an important thesis, wherein were recorded most of the known cases where foreign bodies had been extracted by opening the stomach; the number of successes was considerable. It seemed to be the same in opening the intestine, and the observations of M. Studsgaard in his report were of great importance. They taught us to be less timid, and when the position and the volume of the foreign body had been carefully determined, opening the intestine should be attempted. He asked M. Tillaux if he did not think that, having attempted the operation, resection of the coccyx might not have been advantageously combined with the rectotomy practised by M. Studsgaard; for one could, with this resection, manoeuvre in the small cavity with much greater facility. He asked, also, if the incision made in the median line was not of much less value than one made directly over the left iliac fossa; then, in the case where there was commencing peritonitis, and perhaps sloughing, would it not have been better to make a false anus than to have sewn up the gut and returned it into the abdominal cavity?

M. DESPRÈS was astonished that such a formidable operation should have been undertaken. M. Studsgaard said in his observations that he had felt the foreign body with his finger. If the finger could touch the foreign body, it ought to have been extracted. Forceps, with the blades guarded by caoutchouc, for seizing the bottle, would perhaps have been sufficient.

M. LUCAS-CHAMPONNIÈRE did not share this view; surgeons of incontestable dexterity had been thwarted very often in their efforts of extraction, so that the proposition of M. Desprès could not be entertained. He thought that opening the intestine was not so grave an operation as was formerly supposed, and cited an observation to prove this.

M. MARC SÉE thought that nothing should be done hastily, as radical interference was occasionally useless; sometimes the foreign body became displaced, and assumed a different position, which permitted its extraction. He mentioned

the case of a patient whom he had attended, who was suffering from a colloid tumour of the rectum, which rendered defecation almost impossible. Dilatation was attempted with a large gum-elastic canula. One day the patient passed the instrument too far, so that it disappeared into the rectum. For eight days all efforts at extraction were futile; but on the ninth day, he could not say how, the canula changed its position, so that it could be seized with the blades of the forceps, and readily withdrawn. The patient died, but slowly, from the progress of the cancer.

M. TILLAUX replied to the different objections which had been addressed to him. Perhaps resection of the coccyx would have afforded more room for action, but still it would not have permitted the extraction of a body so voluminous and situated in the iliac fossa. As to the incision in the iliac fossa, M. Studsgaard had considered that, but it had appeared to him that he would have much more space by incising in the median line. In his own particular case he had not discussed the question of an artificial anus, as peritonitis had not shown itself.—*London Med. Record*, Dec. 15, 1878.

Ascites Complicated with Strangulated Umbilical Hernia.

The patient was a man, 55 years of age, who was under the care of M. PETER for six months, suffering from cirrhosis of the liver with ascites. For this, he was tapped for the first time on April 25. An umbilical hernia, which had existed for many years previously, showed signs of strangulation at the time of the operation; but reduction was effected. A second puncture was made on May 1st, and was accompanied by the same accident. This time, however, reduction of the gut could not be obtained, and on May 3d the patient was transferred to M. VERNEUIL'S wards. Owing to the feeble constitutional condition of the man, M. Verneuil refused to operate with the knife. As some leeches, which two days before had been applied to the hernia, had given rise to some hemorrhage, an application of Vienna paste was made at the time the patient entered. The slough separated May 5th, and this was followed almost immediately by an escape of a considerable quantity of fecal matter from the upper part of the wound. The vomiting then ceased, and the patient rapidly gained strength. On May 23d there was no stool, the vomiting then reappeared. A purgative produced no effect. The next day, a sound introduced into the superior opening of the intestine gave vent to a large quantity of semi-liquid material. The vomiting then stopped, only, however, to recommence on the 25th; the ejected matter was black, like coffee-grounds. The escape of feces from the upper opening took place regularly, but the temperature fell gradually, and the patient succumbed on May 27th. At the *post-mortem* examination, the liver was found to be somewhat contracted. Hemorrhagic pleurisy was present on the left side. The strangulation was situated in the small intestine, one metre above the cæcum; there was no trace of the epiploon. The adhesions which united the intestines to the umbilical opening were perfectly firm; the artificial anus had undoubtedly prolonged life, death being due to the other lesions.—*Lond. Med. Record*, Nov. 15, 1878.

Fracture of a Catheter in the Bladder; Removal per Rectum.

In the *Bulletin et Mémoires de la Société de Chirurgie*, Nov. 5, 1878, M. FLEURY describes the case of a man on whom lithotripsy was performed by Civiale in 1863, and who had since been accustomed to wash out the bladder by means of a metallic catheter. On April 23, 1878, he found on withdrawing the catheter that a portion was broken off and remained in the urethra; he pushed

it into the bladder by means of another catheter. When he was seen by Dr. Brun four hours afterwards, he was found to have in his bladder a piece of catheter 7 centimetres (2.8 inches) long, lying with one end at the upper part of the bladder and the other at the *bas fond*. Dr. Fleury, on being called in consultation, advised that no attempt at extraction should be made, either through the urethra or by cystotomy. (The patient was 78 years of age.) The inflammation produced by the foreign body was moderate, and catheterism was continued without much difficulty. Four days later, during defecation, the end of the catheter was found to present at the anus, and was removed by moderate traction. After this, there was no pain; but the urine continued to escape *per anum*.—*London Med. Record*. Nov. 15, 1878.

A Case of Supra-Pubic Lithotomy.

At a late meeting of the Clinical Society of London (*Med. Times and Gazette*, Oct. 19, 1878) Mr. JONATHAN HUTCHINSON read notes of this case, which was that of a man aged about twenty-six, who had suffered from symptoms of stone for about six months. When admitted into the hospital his condition was urgent, the bladder being exceedingly irritable, and the urine containing pus and blood. He was considerably emaciated. There was no difficulty in recognizing that the stone was a very large one, and careful consideration was given to the question of the best means of extracting it. It was finally decided to prefer the supra-pubic method. No difficulty was encountered in the operation; the bladder was easily reached; and, the wound having been adequately enlarged, the stone was seized in the largest pair of forceps. Its size necessitated a little delay in extraction to allow the soft parts to yield. After its removal an india-rubber tube was passed through the urethra and retained in the bladder. It was hoped by this means to drain away the urine without any wetting of the bed. The fundus of the bladder was found much thickened and quite rigid by calcareous deposit. For the first week after the operation the man did exceedingly well; he then began to lose flesh, and subsequently had repeated rigors. The urine contained pus, and was constantly ammoniacal. Although great attention was given to the bladder it was found impossible to keep it empty and avoid overflow on the edges of the wound. The patient died of pyæmia about five weeks after the operation. At the necropsy the bladder was found very much thickened by inflammation, and its mucous membrane ulcerated and coated with concretion. The kidneys contained abscesses, and there were small pyæmic deposits in the liver and lungs. The calculus removed was very hard and heavy, of lithic acid, weighing nearly six ounces and a half, and measuring nine inches in circumference at the greatest and six at the least width. Mr. Hutchinson showed also the cast of a calculus of almost exactly the same size and weight as his own, which had been removed at the London Hospital by the late Mr. John Adams about ten years ago. In this instance, the unusual size of the stone was unexpected, and the ordinary lateral operation was adopted. The patient, who was a healthy young man, recovered well. Whilst this case proved that, in isolated cases, stones of upwards of six ounces in weight might be removed without unusual modifications of the lateral method, he still thought that general experience was in favour of special measures when the dimensions of the stone were so large. He had to choose between the high operation, bilateral section of the prostate, and recto-perineal lithotomy. On the whole, although it was not wise to allow a single case to influence the mind too much, he was inclined, by what he had observed in his own, to think that the high operation had special disadvantages in respect to the impeded exit of urine, and in another case he thought he should

prefer to try the recto-perineal method, with free incision in the median line. It was doubtful, however, whether any modification of the method would have made any difference in the result, as the man was very ill, and his bladder in a state of advanced disease.

Cysts of the Spermatic Cord.

In *Le Progrès Médical* (Nov. 23) M. TRELAT relates a case of cysts in the spermatic cord, occurring in his practice at the Hôpital de la Charité. The patient was a lad aged 14; upon examination, a multiple tumour was detected along the course of the cord unconnected with the testicle, and in the inguinal canal was a swelling which was diagnosed at first to be a hernia, but which was afterwards found to be a cyst of the same nature as those lower down. All the cysts were tapped and the patient apparently recovered, but he soon returned to the hospital with a recurrence, all the cysts having refilled. The two varieties of cysts of the cord are: first, those devised from the remains of the Wolffian body which are connected to the testicle and epididymis; and secondly those which arise from the vagino-peritoneal canal remaining more or less patent. The tumour under consideration belonged to the latter class, and this diagnosis was confirmed by the characters of the fluid drawn off from the cyst, which contained no spermatozoa nor crystals, and was not coagulable. The treatment of the recurrence was tapping and injection of iodine.—*London Med. Record*, Dec. 15, 1878.

Congenital Hydrocele.

In a report upon a memoir upon this subject by Dr. GAILLARD, made to the Société de Chirurgie by M. de St. Germain (*Gaz. des Hop.*, December 10), he observed that the author sought to demonstrate that in young children these cases did best when left to themselves, and that an operation should not be performed upon a child of less than four or five years of age. Of thirteen cases which had come under his care, six had been treated by puncture or by astringents, and seven had been left absolutely to themselves. As these latter cases did perfectly well, he concludes that this should be the general rule of treatment. But M. de St. Germain thought, to say nothing of the problematical duration of the treatment, that no rule of treatment can be laid down from so few as seven cases. Hydroceles, in fact, abound in the children's hospitals, and no child less than a year old is ever operated upon. Resolvents are employed, and when these, and especially the hydrochlorate of ammonia, fail, an operation is performed if the hydrocele assumes inconvenient proportions. The operation consists either in puncture and injection, or in following the procedure of Defer, rendered popular by Maisonneuve and Desormeaux. M. de St. Germain operates upon hydrocele in children three years of age, when it attains the size of an egg, puncturing it and then cauterizing the sac, as practised by Defer; and he has never met with any accidents.

M. Boinet observed that accoucheurs had long insisted upon the spontaneous cure of the hydrocele of new-born infants. But congenital hydroceles should be operated upon towards the age of five or six, because, when they persist too long, they predispose to the formation of hernia. M. Desprès agreed with Dr. Gaillard, and is of opinion that the operation is often abused—being lucrative, if useless. He has never operated upon a congenital hydrocele, as when these lesions are left to themselves they disappear spontaneously. On the other hand, he has never known hydrocele in the adult become cured under the influence of astringents. M. Tarnier formerly was in the habit of applying compresses dipped in aromatic wine for the treatment of hydroceles in new-born infants, which are by

no means rare, generally appearing about the second or third day. Having afterwards left them to their natural course, he found that they did just as well without any treatment. M. Houel had seen a great number of these cases, and on several occasions he has found that they could not be reduced, although communicating with the peritoneal cavity. The conclusion that such communication does not exist must not, therefore, be inferred because reduction cannot be obtained. It is just as with irreducible spina bifida. M. Berger observed that Mr. Curling was only able to obtain reduction in one case after compression which lasted three-quarters of an hour; and M. Lannelongue added that no certainty can be obtained from the failure of the measures when these have only been continued for a short time. He has met with hydroceles which could only be slowly reduced by prolonged compression made in the horizontal posture.—*Med. Times and Gazette*, Dec. 21, 1878.

Electro-Puncture in Hydrocele.

F. ZAMBONI (*Giornale Veneto di Scienze Med.*) performed electro-puncture for five minutes at a time at two sittings, in a case of hydrocele. By the second day the effusion had disappeared. Ten days later it reappeared; but one more puncture caused it to disappear permanently. Zamboni thinks that the electricity gives tone to the vessels and stimulates their absorbent power.—*London Med. Record*, Dec. 15, 1878.

Treatment of Perineal Abscess.

M. VERNEUIL describes his treatment for certain abscesses at the margin of the anus. There are two distinct varieties of these abscesses; they both occupy the ischio-rectal fossa, but the one variety points towards the buttock, and tends to open externally, whilst the other destroys the circumrectal cellular tissue and tends to open into the rectum. In the first class of cases a simple incision made in the direction of the anus is sufficient; healing takes place rapidly without leaving a fistula. When the wall of the rectum has been laid bare, however, this treatment would be almost surely followed by a fistula. This happened in many cases which have come under M. Verneuil's notice. He quotes one, that of a strong, healthy man, who had a circumrectal abscess which opened of itself. M. Verneuil afterwards merely enlarged the opening, to allow a free escape of pus. Two months later a fistula was developed, and was operated on, the patient being altogether for three months in the hospital.

During the last few years M. Verneuil has combined the two operations. He opens the abscess by an incision, then introduces a ground probe, perforates the wall of the rectum at the highest point at which it is laid bare, and divides all the tissue between the two openings by means of the thermal cautery. He has done this many times without a bad result. When the two operations are done at different times, recovery takes place much more slowly. In a case of large prostatic abscess treated in this way, the cure was complete in thirty days, with the exception of a small superficial wound. The only objection which could be made to this mode of treatment is that it is rather more serious, and takes longer time than a simple incision: but then the cure is much more speedy and more certain.—*London Med. Record*, Dec. 15, 1878.

Abscess of the Margin of the Anus.

In a clinical lecture (*Rev. Méd.*, Nov. 18) Prof. VERNEUIL stated that in abscess of the margin of the anus, in which the pus has a tendency to find its way towards the surface of the buttock, no detachment of the wall of the rectum

taking place, an incision of four or five centimetres in the direction of the anus discharges the pus. Cicatrization rapidly ensues without any fistula forming. But when the pus, instead of pursuing this course, destroys the perirectal tissue, causing a slight redness and tumefaction in this region, the wall of the rectum becomes ulcerated, and a fistula is formed. The discharge of the pus, even by a large incision, does not prevent the subsequent formation of this fistula. Instead of, as formerly, first opening the abscess and then treating the fistula, Professor Verneuil, for some years past, has opened the abscess, and having introduced a grooved director, he guides this towards the wall of the rectum, raising and perforating this. He then brings the director down by the rectum, dividing by means of the thermo-cautery all the bridge of the tissues which is comprised between the two openings. He has performed many operations of this kind without ever having met with any serious accidents. The pus comes away readily, and the pains cease, and all that is necessary is to frequently disinfect the wound by injections of weak carbolic acid, without introducing any tents—a practice which is both useless and dangerous in fistula. A cure takes place in an infinitely shorter time than when the abscess is treated at one time and the fistula at another.—*Med. Times and Gazette*, Nov. 30, 1878.

Bullet Wound of the Skull.

At a meeting of the *Société de Chirurgie* (Oct. 16), M. TERRILLON read a paper on a case of osseous fistula following the penetration of the skull by a revolver ball. The fistula was situated behind the external auditory meatus, and gave rise to purulent discharge. There were no cerebral complications, but complete deafness existed on the injured side. An examination revealed the presence of the projectile at a depth of nearly half an inch, not counting the thickness of the integuments. Extraction was attempted, but the ball was so firmly fixed that merely a few particles of lead were brought away. The skull was trephined and the bullet then easily extracted with forceps; merely two or three millimetres of the internal table of the skull separated the foreign body from the cranial cavity. The patient so far is well; but M. Terrillon had not read a single observation with regard to these lesions of the skull caused by projectiles, that had not terminated fatally. This takes place more or less slowly; sometimes, more than a year after the penetration, cerebral symptoms show themselves, such as meningitis, phlebitis of the sinus, hemorrhage, abscess of the cerebrum or cerebellum.—*London Med. Record*, Dec. 15, 1878.

Fracture of the Cranium, with Depression of the Left Parietal Bone.

Dr. LOUIS CARADEC relates the following case in the *Gazette Hebdom. de Méd. et de Chir.*, October 25, 1878.

The patient, a woman aged 25, was struck on the head by a stone. She immediately became unconscious, and remained so for two hours. Her medical attendant found her suffering from shock. Her breathing was embarrassed, her pulse weak, skin cold, pupils dilated. The tongue was directed to the right, and the right arm and face were paralyzed. She was also aphasic. The next day she was feverish, and had headache. On the fourth day a subcutaneous abscess at the place of injury was evacuated, and on the ninth day the wound had healed.

Seventeen days after the accident the patient was brought to M. Caradec. On examination he found a cicatrix, 5 centimetres in length, at the antero-inferior part of the left parietal bone. Its position would correspond internally with the fissure of Rolando and the ascending frontal and parietal convolutions. In the line of the cicatrix, there was a cup-shaped depression of the cranial wall. The walk of the patient was natural. She slept well and ate well. Her tongue was

put out straight. The pupils were equal, contractile, and of normal size. She had a stupid appearance. Her powers of memory and intellect were enfeebled, and her speech embarrassed, indeed she could not speak a few words without stammering, and she was often temporarily aphasic. There was marked paresis of the right side of the face, and whenever the facial muscles were put into play, slight muscular contractions were observed on this side, especially in the region of the labial commissure. The right shoulder was unaffected, but there was emaciation of the right arm, forearm, and hand; their temperature was lowered, and their sensibility and motility impaired. There was a difference of temperature between the right and left arms of about 5° Cent., the right arm being 27° to 29° Cent. (80.6° to 84.2° Fahr.) while the left was 32° to 34° (89.6° to 91.2° Fahr.). The prick of a pin was not felt in the right forearm or hand. The right arm could be moved, but the grasping power of the hand was diminished, and could not be long sustained. Caradec attributes the symptoms to fracture of the left parietal and frontal bones, with lesion of the upper parts of the left ascending frontal and parietal convolutions, and cites this case in support of the view that the motor centres of the upper extremity are in the upper two-thirds of the ascending convolutions. The absence of more pronounced aphasia and facial paralysis, he thinks, is due to the fact that the lower parts of the ascending convolutions were little injured. The case was one in which trepanning should have been resorted to at an early period.

Eighteen months after the accident, the aphasia and facial paralysis had completely disappeared. The brachial paralysis could still be observed, but was very slight. The middle, ring, and little finger were more paralyzed than the thumb and index finger.—*London Med. Record*, Dec. 15, 1878.

Fractures of the Tibia.

M. HEYDENREICH (*Thèse de Paris* and *Gazette Hebdomadaire*, July 12, 1878), divides fractures of the upper extremity of the tibia into those of the upper third, below the anterior tuberosity, and fractures of the upper extremity properly so called. 1. Fractures of the upper third diminish in frequency as they approach the articulation; they are transverse or oblique, and are generally accomplished by fracture of the fibula. The cause is most frequently direct violence, although they have been caused by a fall on the heel; fractures caused by indirect violence are generally near the anterior tuberosity. There are swelling and considerable ecchymosis, due to the abundance of extravasated blood; effusion into the knee-joint often takes place; displacement may not occur. The prognosis is grave, because of the liability to gangrene; union takes place very slowly (three to four months), probably because of the blood extravasated between the fractured ends. The limb should be extended; when there is not much displacement, slight flexion is preferable, being less likely to produce stiffness of the knee, which may follow the treatment. 2. Fractures of the upper extremity of the tibia comprise (a) separation of the superior epiphysis; (b) separation of the anterior tuberosity, the most frequent cause of which is contraction of the triceps femoris; (c) fracture of one of the condyles; (d) fracture of the entire extremity of the bone. This last form presents several varieties, according to the extent of the fracture, the position and the number of the fragments. The fibula is often intact. Fractures of the entire lower extremity are rare; they may occur at any age; they are caused by direct violence or by falls on the feet. The prognosis is grave; they may be confounded with contusion, sprain, dislocation of the tibia, or fracture of the femur. These are the principal conclusions of this thesis, which, to be so complete, must have cost the author much laborious work.—*Lond. Med. Record*, Dec. 15, 1878.

Resection of several Joints in the same Individual.

This case, which occurred in the practice of Dr. M. SCHEDE, is reported in the *Deutsche Zeitschrift für prakt. Medizin*, No. 20, 1878. The patient, a girl aged 19, had suffered for four years from rheumatism of several joints, which ran a rather acute course, and finally led to the formation of ankyloses. There was bony ankylosis of both wrists and elbows, both knees and ankles; most of the phalangeal joints were also stiff. Most of the joints with the exception of the wrists, were much thickened. The patient was thus in a state of complete helplessness. Within four months, Dr. Schede performed resection of both wrists and elbows, as well as both ankles. At the time of the report, both wrists were movable; so also were the elbows, but one had already become more stiff and threatened ankylosis. There was limited power of motion in the ankles. The course of the case showed that a better result in regard to active and passive motion follows when the resection is extensive, than when a small piece of bone is removed. This depends, probably, on the fact that the disposition to the production of bone and the formation of ankylosis, which in some such patients remains very great, continues even after resection. The patient in this case had every reason to be satisfied with the improvement in the utility of her limbs. After her recovery, she could assist her walking by crutches, whereas she could not use them before; she could also use her hands in feeding and clothing herself, which previously was quite impossible.—*British Med. Journal*, Nov. 23, 1878.

Excision of Portion of Tarsus for Talipes Varus.

At a late meeting of the Clinical Society (*Lancet*, Nov. 30) Mr. BRYANT exhibited a patient who had been the subject of talipes varus, and had been treated by the removal of a wedge of bone from the tarsus. The case was that of a boy twelve years of age, who had been under surgical treatment for the condition from infancy. When five years of age tenotomy had been performed with some success, but as the Scarpa's shoe had caused pain, it was laid aside, and the deformity returned. On admission into Guy's Hospital the muscles of the leg were wasted, and the patient walked on the outside of the foot, upon which had formed two large bursæ. Mr. Bryant removed a wedge-shaped piece of bone from the tarsus, as performed by Mr. Davies-Colley in October, 1875. An incision was made across the dorsum of the foot from a point corresponding to the tubercle of the scaphoid to the outer border of the cuboid, and a second incision along the outer border of the foot, the two incisions forming a ∇ shape. The flaps were then turned back, and the tendons of the extensors divided. A spatula was introduced around the scaphoid bone towards the sole of the foot to protect the soft parts, and the lower section of the wedge of bone cut with a key hole saw, one line of section extending across the dorsum of the foot from the scaphoid to the anterior border of the cuboid, the second bone section being made higher up; and a wedge, with its apex corresponding to the scaphoid bone, and its base to the cuboid, one inch long, was thus cut away. After the operation the anterior half of the foot was readily brought round into position, and horse-hair drainage was employed. The temperature rose to 102° , but on the third day was down to 99.7° , with a pulse of 80. A small quantity of pus was evacuated by a puncture made into the skin, in a position corresponding to the apex of the wedge; in other respects the wound healed rapidly. The boy now presents a foot of good form with a flat sole, on which he walks with comfort. The foot was somewhat shortened after the operation. The tendo Achillis had been cut, with the object of bringing down the heel, but with little result. Mr. Bryant said that ablation of the cuboid had been suggested by Dr. Little, in 1854, and

practised by Solly, in 1857, upon which the operation now under consideration was a great improvement. He considered it also much better than Mr. Lund's operation for the removal of the astragalus, which was performed in 1872, but which he thought might be useful where the equinus was worse than the varus.

Mr. Davy congratulated Mr. Bryant on the result of his case. He believed that he himself had operated in a similar way more frequently than any other surgeon. There was a class of confirmed and intractable cases of talipes that resisted all methods of treatment. In 1874 he revived Mr. Solly's operation—viz., removal of the cuboid, which had been described by that surgeon twenty years previously, and had fallen into oblivion, and had even been condemned. He did this in five cases with encouraging but not perfect results, proceeding on strictly experimental methods, and not feeling justified in interfering with the astragalo-scapoid joint, until he had proved that division of the calcaneo-cuboid was insufficient. In April, 1876, he published his experience, and in October of that year Mr. Davies-Colley anticipated him in his paper read before the Medico-Chirurgical Society by performing the milder operation, which Mr. Davy had now performed several times. He showed the casts of his ninth patient, taken before and after the operation, and the result was very satisfactory. No doubt, the operation was on its trial, and was opposed by many surgeons, but he was content to abide by the results, and was glad to see Mr. Bryant commending it so strongly. Patients, after the operation, became absolutely plantigrade; the scar was small and well out of the line of pressure; there was no possibility of relapse, and a symmetrical foot took the place of an unsightly and useless member.

Popliteal Aneurism treated by Esmarch's Bandage.

At a late meeting of the Clinical Society of London (*Med. Times and Gaz.*, Dec. 28, 1878), Mr. JONATHAN HUTCHINSON related the particulars of two cases. The subject of the first was a robust gentleman, aged twenty-six, who had never had syphilis. The tumour filled the right popliteal space, and pulsated strongly. There had been pain for three months, but the pulsation had been recognized only a month. He had been placed under Mr. Hutchinson's care by Mr. Drew. After three days' rest in bed, ether was given, and Esmarch's bandage was applied to the entire limb. It was put on tight below the knee, very lightly over the tumour, and tightly again on the thigh. The elastic strap was applied as tightly as possible in the upper third, and after a little time the bandage was removed. The tumour was left full of blood which was completely stagnated. Ether was kept up for an hour, and at the end of that time the strap was removed, and a horseshoe tourniquet substituted. No pulsation ever returned in the tumour, but as a matter of precaution the tourniquet was retained for a few hours. The subsequent recovery was rapid and complete. The second case was less speedily successful. Its subject was a gunnery instructor from Shoeburyness, who had been treated by pressure for an aneurism in the calf two years previously. On that occasion success had been obtained by thirteen days' compression. The aneurism on the second occasion filled the popliteal space, and was the size of a large orange. It pulsated strongly. Esmarch's bandage under ether was used for one hour in exactly the same way as in the previous case, but with no benefit. The tumour beat as before. Three days later another trial was made of the same plan; but on this occasion arrangements had been made, by relays of students, to keep up digital pressure after removal of the constricting strap. The man was kept under ether for two hours. At the end of that time the strap was removed, and during the change of hands it became evident that pulsation was still present, but it was more easily controlled than before. Manual

compression was kept up for about seven hours, at the end of which time pulsation had quite ceased. The tumour remained solid, and rapidly diminished in size, and the man left the hospital a few weeks later quite well. It was thought that in this case, although the Esmarch bandage did not produce consolidation, yet that it conduced to the cure, and certainly on neither occasion did it do any harm. Mr. Hutchinson stated that he had brought forward these cases, in neither of which was there anything original in the treatment, in order to elicit from surgeons statements of their experience and opinions in reference to this novel and important method.

Mr. THOMAS SMITH, by the use of Esmarch's bandage, applied as he had seen Mr. Croft apply it at St. Thomas's Hospital, had cured two cases, and had failed with two. In a recent case no chloroform was given, and the bandage was applied tightly below and above the tumour, and left in place. He considered this better than constricting the limb by the cord, a proceeding which, on the Continent, had been followed by permanent paralysis from injury to nerves. The pressure was more diffused by the bandage. In the last case, which occurred to a member of the medical profession, the bandage was alternated with pressure by a tourniquet over the artery, and the treatment lasted from 9 A. M. to 6 P. M., at which time great pain was felt in the swelling, and coagulation probably took place. Pressure was kept on for an hour and a half after this, and the result was entirely successful.

Mr. MORRANT BAKER had had an unfavourable case in a man of forty or fifty, where some blood had escaped from the aneurism, which he had treated successfully. After a preliminary imperfect application, the bandage was kept on for three-quarters of an hour, followed by half an hour's compression with the finger, and was reapplied for twenty minutes, and compression again kept up for nearly two hours. No anæsthetic was employed, no pain was complained of; and at the end of that time the aneurism was consolidated.

Mr. MAUNDER thought that there was no single certainly successful method of dealing with these cases. He had tried Dr. Reid's plan twice; both times unsuccessfully. One was cured by digital compression, and the other by ligature. In his opinion, the objection to this bandage was that it was painful, and required an anæsthetic with its attendant risk.

Mr. BARWELL agreed that no single method could be relied upon, but said that the bandage was especially unsuitable in fusiform aneurisms. He had tried it in a bad case, where there was extensive arterial disease, with fusiform aneurisms in the axillary and brachial arteries; he made use of a sort of bridge to keep the bandage off the tumour, and applied it lightly above the swelling, allowing a small current of blood to pass. After an hour and a half there was no result; it was subsequently reapplied twice, but he was obliged finally to ligature the artery, tying it gently in consequence of its diseased state; the man was well in ten days.

Mr. T. SMITH objected that this method of applying the bandage, so as to allow the current of blood to continue, was essentially different from the plan under discussion.

Mr. BARWELL added that on one occasion the flow was arrested for about one hour.

Mr. HERBERT PAGE had tried the bandage without success in a case apparently well suited for it, and in the hospital at the same time a case of Mr. Lane's was treated in the same way with a like result. The plug in the distal arteries, which had been thought to precede clotting in the aneurism, was, in his opinion, a later event, and followed its cure. He alluded to a case of Mr. Pemberton's, where this method of treatment had been followed by gangrene.

Mr. BRYANT related a case where the bandage was used for one hour, under the influence of morphia, by which time there was much consolidation. In two or three days the aneurism grew worse; but the bandage under chloroform for three-quarters of an hour was followed by much improvement. It soon relapsed, and he then tied the artery. Gangrene followed in a few days, which required amputation below the knee. In his opinion, the bandage was responsible for the gangrene; and it constituted a serious, though perhaps not fatal, objection to its use.

Dr. MAHOMED considered the bandage was contraindicated in cases of extensive arterial disease. He had found that, when the bandage was placed on one arm, the volume of the other was much increased, showing that a considerably increased distension of the rest of the vascular system resulted. Where the cerebral arteries were diseased, this might be dangerous; but this objection did not apply to the ligature.

Mr. GOULD alluded to two cases of aneurism treated in this way which he had examined. In both, the clot in the aneurism was loose; that in the artery, above and below, firm and fibrous. He considered the coagulum in the aneurism was secondary, and he thought Mr. Bryant's case bore out this view. Here the clot, being soft, was broken up by the stream, which led to thrombosis and gangrene beyond. This difference in the clot he attributed to the imperfect nutrition of the walls of the sac. He still thought those cases would be successful where the opening was large and the vessel healthy.

Mr. NORTON had tried the bandage without success in one case. There was extensive vascular disease, with double aortic murmur and three aneurisms. The treatment, though it failed, had none of the disastrous results Dr. Mahomed predicted, though the case was just such an one as those referred to by Dr. Mahomed. He considered the risk due to distension of the vessels, as the result of compression, small indeed when compared with the risk of a ligature where general vascular disease existed.

Mr. HEATH agreed with Mr. Barwell that a fusiform aneurism was not amenable to this treatment, and with Mr. Gould in his theory of the action of this bandage. In Mr. Smith's case, however, the general state of the vessels was very unfavourable; yet a rapid cure resulted. It was quite possible that in Mr. Bryant's the gangrene was a result of the ligature, and not of the bandage. In a patient of his, in whom the bandage had been twice applied, and in whom the artery had been ligatured, once in the usual way, and once with antiseptic precautions, the result was of interest. The patient was strongly in favour of the antiseptic plan, from which he had suffered much less pain.

Mr. HUTCHINSON, in reply to the various speakers, said he thought the plan of treatment under discussion a valuable addition to the means at our disposal. It seemed impossible to predicate as to the cases in which it was most likely to succeed; but it seemed to be a trial in nearly all. He could not admit that Mr. Bryant's case proved that any ill consequences were due to the bandage. It had simply not cured. The gangrene came on after the ligature, and should be attributed to it, and not to the Esmarch bandage. He believed that, in different individuals, very different degrees of aptitude for coagulation were displayed by the blood, and hence chiefly the explanation why some cases were cured easily, and others with difficulty. The tendency to coagulation might be helped by insisting on abstinence from fluids, as was done in both his cases, and by giving drugs, such as iodide of potassium, lead, and digitalis. Whilst fully admitting the great value of digital compression, he still thought that a trial should first be given to the bandage. He had had several very rapid cures by compression; but he did not recollect any case of aneurism of similar size in which the patient

had suffered less during the treatment than the first of these which he had just related. If ether were used, not chloroform, he believed that no danger was encountered; and he felt sure that the anæsthetic made the treatment much less painful. He would strongly recommend that, in all cases in which the bandage was tried, arrangements to continue digital compression immediately afterwards should be made; and that great care should be taken to prevent the blood from passing into the tumour on release of the limb from the strap.

Control of Hemorrhage in Amputation at the Hip-Joint.

Mr. ALFRED PEARCE GOULD performed the operation of amputation at the hip-joint on the 7th at Westminster Hospital. The patient was a young man, aged twenty-eight, in whom Mr. Gould had previously resected the joint. The hemorrhage was controlled by an original device of Mr. R. Davy's, and so completely that only about three ounces of blood were lost. Mr. Davy compresses the common iliac artery by introducing a straight wooden rod, with a bulbous end, carefully into the rectum for about nine inches. The whole length of the rod is about twenty-two inches. It requires, of course, considerable knowledge to apply this instrument accurately and to use it harmlessly. But in skilful hands, the slightest elevation or depression of the handle, when once the instrument was brought to bear on the vessel, was enough to stop or to allow the flow of blood.

We were struck with the complete anæmia of the stump when Mr. Davy lightly raised the handle of the stick. Notwithstanding the slight amount of blood lost, the patient unfortunately died on the fourth day after the operation. The post-mortem examination showed that the parts where pressure had been applied to control hemorrhage were quite uninjured. The chief morbid appearances were extensive thrombosis of the veins of the opposite limb, extending into the common iliac vein.—*Lancet*, Dec. 21, 1878.

Midwifery and Gynæcology.

The Development and Maturation of Graafian Follicles during Pregnancy.

Dr. SLAVJANSKY, of St. Petersburg, describes (*Annales de Gynécologie*, Feb. 1878) the condition of the ovaries in a case of extra-uterine fœtation, and draws some general inferences as to the development of Graafian follicles during pregnancy. The patient was twenty-four years old, had had one child previously, and died from rupture of an extra-uterine fœtation of the left Fallopian tube of three and a half months' development. Menstruation had been suppressed during the pregnancy, but a slight discharge of blood had taken place for two or three weeks before rupture of the sac. The portion of the left Fallopian tube distended by the fœtal sac was that near its insertion.

The left ovary was 3.5 cm. long and 2.5 cm. broad. Its surface was covered by cicatricial furrows, and in places it was adherent to adjacent parts by long transparent false membranes. One portion appeared swollen, and a transverse incision at this part laid open a cavity 1.3 cm. in diameter, two-thirds filled by contents which had been coagulated by the alcohol in which the specimen had been kept. Towards the surface of the ovary the wall of this cavity was as thin as a sheet of paper, the thickness not being greater than 0.05 cm. Towards the

posterior surface of the ovary was a softened spot 0.4 cm. in diameter, having the appearance and characters of a corpus luteum. In the cortical substance were several cavities with coagulated contents, the largest 0.3 cm. in diameter, having precisely the appearance of Graafian follicles in different stages of development. Beneath one of the furrows in the same part was a brick-red, irregularly stellate body, 0.2 cm. in diameter.

The right ovary was 2.7 cm. long and 1.5 cm. broad, and its surface was furrowed like that of the other. At its internal part, near the ovarian ligament, was a prominence, a section through which showed a recent corpus luteum, 1.0 cm. in diameter. Its central portion was whitish and firm, and white stellate bands extended from it into the yellow substance. Near the corpus luteum was a Graafian follicle 0.3 cm. in diameter.

On microscopic examination of the walls of the principal cavity in the left ovary, they were found to correspond to those of a ripe Graafian follicle. The internal surface was covered by flattened cylindrical epithelium, the cells of which resembled those in the membrana granulosa of the smaller Graafian follicles. A small prominence was noticed near the thinnest part of the wall. Being removed on the point of a needle, it proved to consist of a mass of epithelial cells, in the midst of which one was an ovule. This cavity was then clearly not a cystic degeneration, but a Graafian follicle ripe and ready to burst. The corpus luteum, 0.4 cm. in diameter, in the left ovary had all the microscopic characters of these bodies. Its cells, however, showed commencing degeneration, and their nuclei were scarcely discernible. The larger corpus luteum in the right ovary had the characters of the true corpus luteum of pregnancy strongly marked. The cells were clearly marked and their nuclei distinct. The central portion consisted of a connective tissue of recent origin, containing more round as well as fusiform cells than in the other case. The cortical substance of both ovaries also contained the bodies formed by abortive Graafian follicles, that is to say, stellate masses, consisting of connective tissue of recent or old formation. In one was found the trace of an ovule, in the form of a collapsed zona pellucida.

The author concludes that during pregnancy there may be found, but perhaps only exceptionally, Graafian follicles, ripe, and on the point of bursting, and remarks that Scanzoni has admitted the possibility of follicles becoming mature, though not of their bursting, during pregnancy. Of the three corpora lutea visible to the naked eye, he considers that the most recent, situated on the side opposite to the pregnancy, was due to a follicle which had ruptured since the commencement of gestation, and that a migration of the ovum across the peritoneal cavity was not to be inferred. The second in age, which had also the character of the true corpus luteum of pregnancy, he considers to have belonged to the fecundated ovum which was arrested in the Fallopian tube of the same side. The older and brick-red body he regards as being of a date anterior to gestation. Thus the case would show the possibility, not only of the rupture of a Graafian follicle during pregnancy, but of the formation thereby of an additional corpus luteum. The author refers to the view of Mayrhofer (recorded in the *Obstetrical Journal*, vol. iv. p. 699), who holds that follicles rupture during pregnancy as at other times, and that the corpus luteum of pregnancy does not correspond to the fecundated ovum, but is formed afresh every month. He considers that this cannot be accepted until established by a greater number of well observed cases, and points out the necessity for examining the ovaries in all parts with greater minuteness than has usually been employed.—*Obstetrical Journal of Great Britain*, Dec. 1878.

Chloroform in Natural Labour.

Professor COURTY of Montpellier has recently contributed to the *Gazette Hebdomadaire* (October 25 and November 8) an interesting paper upon "The Employment of Anæsthetics during Natural Labour." It seems to be founded upon an address which he delivered at the International Congress of the Medical Sciences held at Geneva last September, which was occasioned by a paper upon the subject read by Dr. Piachaud, warmly approving of the practice. While agreeing with Dr. Piachaud in his conclusions upon the subject, Prof. Courty took occasion to regret the slight extent to which the practice of giving chloroform during labour prevailed in France. And, indeed, it is a matter of surprise, after the safety of the practice and its great advantages have been demonstrated for so long a period in this country, so far from having been introduced into France, it has been met with what may be called a violent opposition on the part of accoucheurs—even those in high position. But we cannot but feel surprised that Prof. Courty, in the paper which we are about to notice, having for its main object the making known the utility of chloroform and the futility of the objections which have been advanced to its employment, makes no allusion whatever to the efforts which have been already made in the same direction by Dr. Charles Campbell, formerly Chef de Clinique of Prof. Paul Dubois, and for many years past one of the most distinguished accoucheurs of the French metropolis. Yet surely his authority in the matter is of far higher import than that of Prof. Courty, who states that he is only in possession of forty cases of his own whereon to base his recommendations. Dr. Campbell was enabled in his first publication upon the subject in Prof. Gubler's *Journal de Thérapeutique*, in 1874, to refer to more than 900 cases in which he had employed chloroform in natural labour; and in his memoir presented to the Congress at Geneva, and since published separately in 1877, he states that he has now administered it in 1052 out of 1657 labours, without the production of hemorrhage or other accident, and without delaying the progress of delivery. The truth of his statements has not been denied, but still the practice which they inculcate has been violently opposed by Profs. Pajot, Depaul, and others, chiefly in consequence of, it would seem, their having confounded the moderate amount of anæsthesia (*demi-anæsthésie*, or *anæsthésie obstétricale*) employed by Dr. Campbell with surgical anæsthesia which he would reserve for obstetrical operations. However, we do not doubt that the practice will eventually triumph over the opposition which always awaits every innovation in France that is not of Gallic origin.

In the meantime, we may advert to Prof. Courty's own observations. He states that although for a long time past he has not practised midwifery, yet he has often found himself compelled to comply with the wishes of patients, who having formerly undergone treatment for uterine or peri-uterine disease, and become subsequently pregnant, and attend them in their confinements in order to allay their fears. In regard to these cases, two things have to be observed. First, that none of them were primiparæ, so that it is possible that less chloroform may have sufficed for them. On the other hand, all these patients had been before the subjects of more or less dangerous puerperal accidents; so that the opportunities were exceptionally good for judging of the efficacy and utility of obstetrical anæsthesia; since it was known beforehand that all these patients had had bad times on former occasions, several of them having been on the point of dying from hemorrhage or other accidents. They were therefore in relatively unfavourable conditions when compared with those of ordinary lying-in women. In all these patients, more than forty in number, chloroform was employed, and

in none of them did it give rise to any serious inconvenience, or cause regret for its having been used.

1. Speaking from the experience which he has derived from observation of these cases, Prof. Courty observes, first, with regard to the period at which the chloroform should be given, that although this should not be considered as arrived so long as the pains are moderate and regular and all seems progressing without excessive suffering or exhaustion, yet it should not be laid down as a rule that we must wait until the expulsive period has arrived, and the torture of its accompanying pains has to be prevented. When the pains become too strong or irregular, when the patient becomes excited or exhausted by their violence, continuousness, frequent return, irregularity of their course, or the diversity and multiplicity of their seat, their neuralgic character, and want of effective power, chloroform should be administered: and it is marvellous to observe how, after a few aspirations, without loss of consciousness, or even complete loss of sensibility, the pains assume their proper intermittent character with equal periods of repose, the contractions become regular, and the labour re-acquires its normal course. The first advantage of chloroform, therefore, is its relief of excessive, irregular, and enervating pains, without impeding contraction, a sensation even of slight pain being still sometimes perceived. The inhalation is repeated or not in proportion to this amount of sensation, and the patient may be thus watched and kept in a state of half-somnolence for hours, the labour still progressing, and expulsion taking place almost unconsciously. The benefit which accrues from this suppression of pain by the diminution of subsequent reaction has not been sufficiently adverted to.

2. A second advantage is the cessation of muscular contractions, which are themselves the consequences of painful sensations having the double character of reflex motions and synergetic actions. Some of these contractions form a direct obstacle to parturition, as in perineal resistance. A portion of uterine effort is necessarily expended in overcoming this resistance; and when this is obviated, so much is gained, the uterine contraction being then employed solely in furthering the progress of the presentation. The duration of the labour is diminished by so much; and in all these cases it was found as a fact that the preceding labours had been very much longer. As regards the other contractions that are suppressed, of the muscles of the abdomen, the diaphragm, and other muscles which, participating in the effort, are brought into play when the patient exerts all her force in aid of the action of the uterus, the advantage of their suppression may not seem so evident. Prof. Courty, while admitting their immediate direct efficacy in aid of the expulsive action of the uterus, operating in this way as they do in micturition and defecation, yet believes that the service they render is often a very questionable one, giving rise frequently to accidents to which too little attention has been paid. Moreover, he does not believe that the duration of labour is really abridged by these voluntary contractions, inasmuch as proportionate perineal resistance remains. By suppressing both the abdominal and the perineal muscular contractions, the uterus is allowed to pursue its work without obstruction and without disorder, its contractions then taking on a regularity in every way favourable to the accomplishment of its function. The energetic and regulated action of the uterus can be readily felt, and may almost be seen. This has been so markedly the case in all the cases that have come under Dr. Courty's notice, that he is quite at a loss to comprehend the fears of some accoucheurs, and still less the observations which they have reported of the suppression of uterine contractility under the influence of chloroform employed in suitable doses.

3. As a consequence of the suppression of pain and the diminution of the duration of labour, "traumatism" is necessarily also diminished. When we consider

the amount of this which is produced in a prolonged labour by the pressure, contusions, lacerations, intestinal effusions, etc., which occur, influencing so many organs, we can only be surprised that we do not oftener meet with ovaritis, metritis, perimetritis, peritonitis, vesical fistulæ, and the various other puerperal accidents, which may be regarded as the natural results of such a traumatism. The chances of such accidents are greatly diminished by obstetric anæsthesia, and in no one of his cases has Prof. Courty met with any one of them.

4. Another advantage, which is opposed to the assertions of some accoucheurs, has been the result of Prof. Courty's observations, viz., the absence of hemorrhage, and that with regard to some of his patients who in former confinements had suffered from it. This may be due to the fact that none of the cases have been primiparæ, and that he has never had to carry chloroformatization very far. The labours having been very short, and the womb having had to continue its contractions for a relatively less time than ordinary, and not having to overcome perineal resistance, has not suffered subsequently from inertia, the ordinary cause of hemorrhage.

"In employing chloroform for lying-in women I observe the same precautions as in all my operations. In place of having her chloroformed by an assistant, so as to produce both insensibility and muscular resolution, assimilating her to a corpse, as I have sometimes seen done in England on patients about to be operated upon (which I may say, in passing, explains to me the incomparably greater frequency of deaths from chloroform in that country compared with our own), I cause her to breathe the chloroform by little whiffs, and mixed at first with plenty of air, making her count aloud, in order to cause her to respire regularly, and at the same time render me an account of the condition of the nervous centres. I suspend the anæsthesia when the pains have been rendered tolerable, resuming it and suspending it again according to the necessity. I have thus, without any danger, been able to prolong anæsthesia in women in labour from one hour to eight and even ten hours, and have consumed in a day, in small whiffs 120, and perhaps even 150, grammes of chloroform. I say 'perhaps,' for it is difficult to dose it when the most simple and least frightening mode of administration is employed, viz., by a sponge placed in a curved napkin. Thus used, so little fear does it excite, so easy is it employed, and so well tolerated by most patients, that they familiarize themselves with it to the risk of converting it into an abuse if not carefully watched."—*Med. Times and Gaz.*, Nov. 23, 1875.

Sterility.

Dr. WALTON, at a meeting of the Ghent Medical Society (*Annales de la Société de Méd. de Gand.*), read notes of a very interesting case of sterility. It was that of a woman who had been sterile for seven years, having many symptoms of chronic inflammation of the neck and body of the uterus, with a very marked anæmia. This latter symptom was treated with iron for a long time, but when the case came under Dr. Walton's care, he assigned it to its true cause. On examination by speculum his suspicions were confirmed, and the patient was cured in two months by means of exclusively local treatment. This consisted chiefly of cauterization with nitrate of silver, and applications of glycerine and tannin. The woman shortly afterwards became pregnant, and was confined of a fine healthy child at full term.—*Lond. Med. Record*, Dec. 15, 1878.

The Use of Pilocarpin in Procuring Abortion.

Dr. CHADZYŃSKI (*Przegląd Lekarski*, No. 25, 1878, and *Allgem. Medicin. Central-Zeitung*) states that he had witnessed very favourable results by treating skin-diseases, such as psoriasis, syphilis, etc., with hypodermic injections of pilocarpin. In one of these cases, the patient, a syphilitic girl aged 21 was in the fourth month of her pregnancy. After the ninth injection had been made labour suddenly began, and the fetus was born.

Three other similar cases have already been observed. It would, therefore, be highly instructive to submit this particular effect of the drug to careful study, as it may prove very useful in cases where premature confinement is indicated. Great care should, however, be observed in administering subcutaneous injections of pilocarpinum to pregnant women.—*London Med. Record*, Dec. 15, 1878.

Medical Jurisprudence and Toxicology.*Poisoning from an Overdose of Sweet Spirits of Nitre, resembling a case of Acute Alcoholic Poisoning.*

Mr. T. WOOD HILL records (*Lancet*, Nov. 30, 1878) the following case of his:—

I was sent for on Sept. 26, 1878, to see a male child aged two years and eleven months, who had climbed up on a chair and taken from off the mantel-piece a stoppered bottle containing between three and four ounces of sweet spirits of nitre, and drunk the contents, during the absence of the attendant. On my arrival, at 1 P. M., I found him in a complete state of collapse, cold, almost pulseless, insensible, both pupils fixed and widely dilated, breathing hardly perceptible. Before seeing him he had vomited freely, the contents of the stomach being undigested food (no blood), with a smell of spirit; the bowels had been well open. I had him placed in bed between warm blankets, and hot-water bottles applied to the feet and armpits. After an hour and a half the temperature of the body began to grow warmer, and at three o'clock seemed of a burning heat; slight perspiration apparent, pulse slightly improved; strong smell of spirit from the breath. At 6 the vomiting and purging recurred; at 10.30 the breathing became stertorous, and he died at half-past 11, just twelve hours after he had taken the fatal dose, no convulsions having occurred.

Necropsy, three days and a half after Death.—Body measured thirty-six inches, well nourished. No external signs of injury. On opening the abdomen, a strong alcoholic odour was emitted. The stomach contained food, chiefly bread, in a state of semi-digestion; the mucous coat was highly inflamed and red near the pyloric end, on the anterior surface of the posterior border, and in one spot very much attenuated. The duodenal end of the small intestines red and inflamed, and bile-stained; the remainder of intestines healthy. Kidneys slightly congested. The other organs healthy. On removing the skull-cap, I found the membranes of the brain highly congested, containing a large quantity of dark-coloured blood. Brain soft, pulpy, and quite wet; vessels congested; no trace of fluid in the ventricles.

Remarks.—This case seems to me worthy of record—first, on account of the rarity of so common a domestic remedy being the cause of death; secondly, showing the power of deglutition of so potent a fluid in a child of that age.

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MARCH, 1879.

Anatomy and Physiology.

Origin of the Fourth Pair of Cerebral Nerves.

Dr. DUVAL gives the results of his observations on the real origin of the pathetic nerve, in a late number of the *Journal de l'Anatomie*. Its course from its point of emergence to its nucleus of origin is, he states, short, but very complex. In the valve of Vieussens two transverse bands can be clearly distinguished, each of which presents two extremities, one occupying a superior plane, which is the emergent or peripheric extremity of the fourth nerve, the other more deeply placed, which represents the cerebral extremity. This part is in relation with the superior border of the cerebellar peduncle and with the external border of the superior root of the fifth—a relation that has led some anatomists to refer to the fifth those fasciculi which really belong to the pathetic. The fibres of the fourth then incline downwards and inwards, and may be followed to their nucleus. If we trace the root in the opposite direction, that is, from its real origin to its emergence, it will be found that, issuing from the nucleus, the fibres of origin run at first nearly transversely outwards, then from before backwards parallel to the axis of the nervous system, then turn suddenly inwards to decussate in the valve of Vieussens with the opposite nerve. The nerve-root, therefore, forms a horse-shoe, with its convexity directed outwards. The anterior limb is formed by the fibrils emerging from the nucleus. The posterior branch constitutes the decussation of the nerves, and the middle longitudinal part is in close relation with the ascending root of the fifth; it is, in fact, crossed by this root of the fifth, which runs from the superior part of the pons into the region of the internal border of the tubercula quadrigemina.—*Lancet*, Dec. 7, 1878.

Absence of Vagina and Uterus.

Professor POLAILLON related the following case (*Union Méd.*, November 12) at the Société de Médecine of Paris: A woman, about twenty-three years of age, presented all the usual feminine attributes with regard to the breasts, pelvis, voice, etc., and her external genital organs were of natural conformation. But, on examination, the hymen was found to be imperforate and incapable of depression. The perineum was broad and resisting, and quite normal. On examining by the rectum, neither any menstrual collection nor any internal organs of generation could be perceived. On combining with this examination the introduction of a catheter into the bladder, this was so easily felt and followed as to prove that nothing like a vagina existed, and no trace of a uterus or ovaries could be perceived. Signs of puberty commenced in the eleventh year, and this proceeded in its ordinary development, except that the menses never appeared. Nor were there any of the symptoms of congestion produced when the menstrual flux is

retained. But the disposition of the patient is entirely feminine. She has voluptuous sensations, and it is under the desire of being married that she has applied for surgical interference. Under these circumstances, it is certain that the ovaries must exist, although placed beyond the reach of careful exploration. In a case of absence of the uterus occurring in the practice of Dr. Gallard, the ovaries were found deeply lodged in the cavity of the pelvis. Of course, in this case of Professor Polaillon's, all interference was pronounced impossible.—*Med. Times and Gaz.*, Jan. 25, 1879.

Materia Medica and Therapeutics.

The Influence of Arsenic on the Body.

In a paper recently published by C. GIES in the *Archiv für Experimentelle Pathologie* (B. vii. p. 175) the results are given of a series of experiments undertaken by him on the effects of the administration of arsenic for a period of four months on pigs, rabbits, and fowls. The quantity given was extremely minute, the rabbits having only 0.0005 to 0.0007 of a gramme, the pigs 0.005 to 0.05, and the fowls 0.001 to 0.008 per diem. In all these animals the weight of the body increased, and the subcutaneous fat was augmented. In young growing animals the bones developed considerably both in length and in girth, and they presented the peculiarity that wherever in the normal state spongy tissue exists, it was replaced by compact bone. The bones of the carpus and tarsus were in this way converted into solid bony masses. Moreover, just as Weigner found to be the case in animals supplied with small doses of phosphorus in their food, a compact layer of bone was found immediately beneath the epiphysal cartilages of the long bone. This was most distinct beneath the upper epiphysal cartilage of the humerus and the lower one of the femur, and was apparent after the arsenic had been given for nineteen days, and where only 0.02 to 0.035 gramme had been taken. It was observed that animals fed in the same stable presented the same appearances in the bones, which Gies refers to the air being loaded with the arsenic eliminated by the lungs and skin of the animals to which it was administered, since he found that the changes were also observed in animals kept in a cage the bottom of which was strewed with arsenic. Besides the changes in the bones, the heart, liver, kidneys, and even the spleen, underwent fatty degeneration. The young of animals fed with arsenic were invariably born dead, though they attained a large size, and presented remarkable hypertrophy of the spleen, and incipient changes in the bones.—*Lancet*, Jan. 11, 1879.

On the Rise and Fall of Temperature and Frequency of the Pulse caused by Tepid Baths.

In order to ascertain the exact alterations of temperature which are caused by baths, Dr. von LIEBIG (*Aerzte Intelligensblatt*, 1878, Nos. 23 and 24) made a great many experiments on himself, which gave the following results:—

During a tepid bath of 89°, which lasts for thirty minutes, the frequency of the pulse is very little lessened, but goes on decreasing during half an hour to one hour after the bath, which time corresponds to the chill that is always experienced after bathing. The temperature taken in the mouth rose a little during the bath, and sank after it, being lower two hours after the bath than it had been before it. The curves of the pulse, which were taken about an hour and a half after the

bath, showed a slight deviation from the normal curve, the highest point of the ascendant stroke being flattened, and reascent of the down stroke entirely deficient. This is explained by the arterioles being contracted by the cooling of the skin, and thereby increasing the resistance in the arteries. The diminished frequency in the pulse may be traced to the same origin.

The elevation of temperature during the bath is caused by the decrease in the loss of heat. The increased expiration of carbonic acid is explained by the fact that during the bath the lungs are not subject to the pressure of the water, the blood circulates more quickly in them. The skin is stimulated in different ways during a bath. These are temperature of the water, pressure of the water, suppression of the exhalations of the skin, and in salt water the osmotic influence. On leaving the bath, these effects of stimulation are of course changed.—*London Med. Record*, Jan. 15, 1879.

Medicine.

The Pathology of Typhoid.

The announcement of the discovery of the fungus of typhoid fever will be received with considerable hesitation by most of our readers, with the result of certain not very remote investigations in their minds. Nevertheless, a series of researches which have recently been published by Dr. LETZGERICH, of Braunsfels, and which appear in the *Archiv für Experim. Path.*, are worthy of at least a passing notice. A year or two ago this observer announced the constant presence in the blood of persons suffering from typhoid fever of isolated micrococci and of spherules of protoplasm which, under cultivation, speedily developed to micrococci, minute, round, or ovoid refracting corpuscles, moving in the blood-plasma, and possessing a great power of resisting the action of acids and alkalis. By the simple growth of these isolated bodies there arise, it is said, spherules of protoplasm in which appear myriads of first rods and then granules. In the height of the disease the blood from the arm contains, moreover, colonies of micrococci connected together irregularly, but these are believed to come, not from the blood, but from the lymph spaces. Both the forms which are seen in the blood, the granules and spherules, wander through the walls of the vessels into the tissues, and in the nerve tissues they are said to cause signs of irritation.

Many experiments were made upon rabbits by the injection of the organic bodies from the typhoid stools. By allowing the stools to stand in glass cylinders, and repeatedly washing, a layer a few millimetres thick was at last obtained, containing a large proportion of micrococci. The injection of this caused in rabbits a typhoid-like illness, lasting a fortnight, ending sometimes in death, and presenting, after death, enlargement and induration of Peyer's glands, and great swelling of the mesenteric glands. The appearances were the same whether the poison was given by the mouth or by hypodermic injection. In the latter, there was first an infection of the neighbouring lymphatic glands, due to a growth of organism and increase of cells. By the extension along the lymphatics these micrococci become generalized, and post-mortem they may be recognized everywhere, but especially in the intestinal canal, where the affection is chiefly localized. When the poison is given by the mouth the intestinal canal appears first to be affected, and from that the generalization occurs. In no case, however, was ulceration of the intestinal glands found, and this must be admitted to constitute a grave discrepancy between the affection thus produced and typhoid

fever. The localization of the affection was most intense, however, as in typhoid, in the lower part of the ileum. From these researches Letzerich concludes that typhoid must be regarded as a pure schistomycosis. It must be confessed, however, that, clear and apparently satisfactory as these statements are, and probable as such conclusions are from the knowledge we possess of the pathology of other diseases, they still "need confirmation."—*Lancet*, Jan. 25, 1879.

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The Therapeutic Value of Warburg's Tincture in Indian Fevers.

Mr. WILLIAM OWEN, of the Bengal Medical Staff, claims (*Dublin Journal of Med. Science*, Jan. 1879):—

1. That Warburg's tincture is a remedy of great value in remittent fever—in some cases preventing a return of the exacerbations; in others, and these the most numerous, diminishing the intensity of the exacerbations, and rendering the remissions distinct, thereby lessening the force of the fever, and opening the way for the subsequent beneficial action of quinine.
2. That in bad cases of intermittent fever it often acts as a charm—in some cases dispersing the paroxysms, not to return; in others diminishing their force and lessening their duration.
3. That it appears to act on the fever *per se*, at the same time increasing the subsequent beneficial action of quinine in a marked degree.
4. That it may be administered with perfect safety by competent hands to children as well as adults.
5. The moderate perspiration produces as good results in these cases as excessive, and the former can, if necessary, be repeated by repeating the dose.
6. That excessive perspiration and consequent debilitating effects (this urged as an objection against it) may be prevented by regulating the dose.
7. That in remittent fevers of a typhoid type with high temperature this medicine may be administered with great advantage, care being taken that the dose and subsequent perspiration be not excessive, and any symptoms of debility being combated with stimulants.

—

Diphtheria and Milk.

At a late meeting of the Pathological Society of London (*Lancet*, Jan. 11, 1879), Dr. Buchanan read a paper communicated by Mr. W. H. POWER upon certain observed Relations between Diphtheria and Milk, remarking that when it was remembered how much the etiologists owe to the pathologists in the elucidation of disease, he could not but think that the pathologists would value in their turn any suggestions for further research furnished by the etiologist. The present note was the outcome of Mr. Power's research into the recent epidemic of diphtheria in North London, where it was proved beyond a doubt that the disease had a distribution corresponding to the distribution of a particular milk, and, so far as it is possible, it has been demonstrated that in this instance the milk was the cause of the diphtheria. But how did the milk become capable of distributing the infection of the diphtheria? Here an interesting fact came out in the course of the inquiry, for it was found that the milk-supply came from two sources, one from cows at Muswell Hill, and the other from some at Kilburn, both sets belonging to the same owner; and whereas at one period of the epidemic the potency to do harm seemed to come from the Muswell Hill source, and not from the Kilburn, yet later on there was, as it were, a transference of such morbid agency, so that afterwards it was the Kilburn milk alone that appeared to have relations with the infection. No external conditions could be found to account for this, and the conclusion appeared to be forced on the mind that in some con-

dition of the cow as cow, and of her milk as milk, is to be found the possible source of the morbid agent. The history of other milk-epidemics was considered in this connection. First, as to enteric fever. In many instances in which a relation has been traced between milk distribution and enteric fever, there is no doubt of the disease being due to the dissemination of milk contaminated by impure water or air. There are other examples where such introduction of water or air has been but obscurely made out, whilst there remains a third class where the intervention of infected air or water has seemed unlikely, and where the readiest explanation of the outbreak would be afforded, if milk, apart from air or water contamination, could be regarded as the source of the disease. In other words, supposing that milk *per se* were able to produce enteric fever, the observed facts of such epidemics would tally better with the hypothesis of direct infectiveness of milk rather than with the intervention of water or air. In scarlatina there are instances of milk epidemics, in which the facts are such as to suggest that some condition of the milk alone is capable of producing the disease. In diphtheria, in the epidemic just mentioned, no support is given to the hypothesis that any antecedent human cases are necessary for the origin or propagation of the disease. As to the probability of such contagious diseases being communicable from animal to man, Mr. Power points out that already we know of several diseases in the cow capable of infecting the human subject. There is vaccinia, *ejusdem generis* with human smallpox, which can be produced in the cow by inoculation with smallpox matter, but which in the cow is a comparatively harmless disease, and not having the properties of human smallpox; for vaccinia in the cow does not tend to spread in the air from cow to cow; it affects the udder and does not appear to influence the milk secretion. There is the "foot and mouth" disease, which affects the milk secretion to a certain extent, and gives rise to aphthous affections and disturbances of the stomach and bowels among consumers of the milk. Then there is milary tubercle of the cow. Animals consuming the milk of tubercular cows have been known to get tubercle; and possibly this may be true of man also. The anthrax fever is known to communicate an analogous disease to persons eating the flesh of cattle which have died from its effects, and a throat disease among pigs that have been fed on it and the milk. Lastly, if an instance of a parasitic disease may be taken which, comparatively harmless in the quadruped, is of serious import in man, the case of trichiniasis may be cited. With such instances in mind there appears to be *prima facie* ground for considering whether diphtheria may not be produced in man by the ingestion of milk contaminated and altered by some condition of the animal itself; and the question naturally arose whether, for instance, in the North London epidemic any particular disease prevailed among the cows furnishing the milk, and if so, whether such disease were specific or not? Whatever it is, it must be an affection which disturbs but little the general health of the animal, whilst affecting the quality of the milk. "Garget" is the trivial name given by cow-keepers to a disease which at times affects milch cows. It is an affection of the udder, and it attacks usually one or two, seldom all four, quarters of the udder, being accompanied by swelling of the part and by the discharge of blood-stained milk from the teat or teats, with subsequent discharge ofropy fluid and blood. But the quantity and quality of the milk yielded by the sound quarters of the same udder are not altered. It was said to lead to no obvious effects in the animals, but Mr. Power was only able to glean information from non-medical witnesses. He also learnt that there was another affection of the cow, characterized by the admixture of blood with milk, without decided affection of the udder. The period of the inquiry into the North London epidemic, when he had learnt the above facts, was too late to test their application in that

instance, and his inquiries of the owner of the dairy in question served only to show to him that the cows might suffer from garget without the owner hearing of it, the affection being regarded as so trivial a one. Mr. Power's note concluded by pointing out that in garget we have a disease which can pass unobserved in the cow, and yet possibly it may have relations with human diphtheria, and it was therefore worthy of further study.—Mr. HUTCHINSON, after alluding to the importance of encouraging the study of diseases of the lower animals, said that he could thoroughly endorse Dr. Buchanan's statement as to the connection between milk and the epidemic of diphtheria in North London, having been fully made out by Mr. Power in his report. The subject of the communication of diseases in animals to man had always been to him of deep interest; and he would cite hydrophobia of man as being another instance in which the human disease differed in its clinical course from the same affection—rabies—in the dog. On the occasion of the Marylebone epidemic of enteric fever from milk contamination, five years ago, some people started the notion that possibly it was not due to the admixture of contaminated water, but was dependent on some disease of the cow. For his own part, he was firmly convinced that then it was due to the water, and it was quite new to him to learn that enteric fever might originate in the cow.

Mr. A. H. SMEE then read a paper upon Garget, having been led to inquire into the subject from Mr. Power's conclusion after his investigation into the North London epidemic of diphtheria, that the outbreak was connected with the milk supply, but that there was no evidence to show that the milk was contaminated after it left the cow; and he wished to know whether there existed any form of disease among cattle which, although capable of fouling milk, produced so little constitutional disturbance in the animal, that the disease might escape the notice of dairymen. Mr. Smeë found, on inquiry, that a condition of ropy milk connected with a state of the udder, in some districts called "garget," was of such a nature. So lightly is it regarded among dairymen that Mr. Smeë found, when making experiments for his work on milk, that his own bailiff, who was engaged in collecting specimens of milk of diseased animals in the district, did not think it worth while to call Mr. Smeë's attention to cases of it which were occurring among his own cows. Nor was it much known to veterinary surgeons, as the cowmen treat the disease themselves, and frequently do not inform their own masters, believing that their own ill-treatment or carelessness in milking may be the cause of the disease. The quality of the milk is, however, greatly altered, so as to spoil for "setting" a large quantity with which it may be mixed; but when used for immediate consumption it is very probable that dairymen would not detect any change in it. Mr. Smeë then read the answers forwarded to him from different parts of England and Wales to the series of questions he had framed bearing on the affection, which it is impossible here to give in detail; and then proceeded to state that it was obvious from these replies that under the generic name of garget there are more than one form of disease. First, a garget referred to traumatic origin, from blows on the udder, or pressure on it, or rupture of a vein in stock-making—i. e., leaving milk in udder for twenty-four to forty-eight hours, in order to enhance the value of a cow for sale. Probably the larger number of cases of ropy milk arise from this cause. Calves fed upon the milk of this kind of garget do not appear to be affected in general health. Secondly, a form of garget produced by cold, which runs an acute course. It does not appear to affect the general health of the animal, or the health of pigs or calves which may be fed with the milk. Thirdly, a form which occurs less frequently, and is possibly of a specific nature. This form not only appears to affect the general health of the animal (as in one case, where a cow had loss of

power on the side of the affected quarter), but it also seems to affect the milk in such a way that it may injure the health of calves. An analysis of milk from the affected quarter of a cow stated to have ruptured a vein in stock-making, yielded—total solids, 11.97; fats, 2.95; non-fatty solids, 9.02; ash, 0.62. And, although distinctly coloured, as from blood, no blood-corpuscles could be found under the microscope, but only particles of bone-colouring matter of indeterminate nature. Another specimen, supplied by Dr. Jacob from a cow suffering from some form or other of garget, yielded—total solids, 11.7 per cent.; fat, 2.5; non-fatty solids, 9.2; ash, 0.76; and the microscope revealed nothing abnormal. Such milk would have been passed as good milk by a public analyst, but at the same time the cow from which this specimen was taken had passed through the acute stage, when probably the milk was more altered. It is a coincidence of great importance, upon which Dr. Jacob would write, that when diphtheria broke out at the Princess Mary's Home at Woking, this garget existed in the farm which supplied the Home with milk. The chain of evidence connecting garget with diphtheria, is at present altogether incomplete.

A Modified Method of Treating Diphtheria.

"When we are convinced that suffering humanity will benefit at all from our experiences, we ought never to abstain from publishing them," is the dictum of Dr. MUELLER-WARNEK, of Bielefeld, in a paper on the treatment of diphtheria before and after tracheotomy (*Berl. Klin. Woch.*, Nos. 44 and 45, 1878), and as he believes that in Prof. Bartels' clinic at Kiel, where he was a long time assistant, greater success has attended certain changes in the treatment introduced about a year ago, he follows the expressed wish of his late chief, Prof. Bartels, and gives publicity to them.

The cases treated have been mainly children under twelve years, a large number of them "nurse-children" brought up in a very wretched way, as such unfortunates generally are. Of 131 cases observed up to the end of 1867, 27 suffered from pharyngeal diphtheria only, and recovered; 15 others, in whom the larynx was also involved, recovered without tracheotomy. The remaining 83, with one exception all under twelve years, had tracheotomy performed on them, and 66 died, 17 recovered. Of these 50 were males, 33 females. In the four years, 1873-1876—the last before the new method was introduced—43 tracheotomies were performed, 36 patients died, and 7 recovered. In 1877, out of 17 tracheotomies, 7, or a number equal to the total recoveries of the four previous years, were saved.

Dr. Warnek ascribes this improved figure to the use of a soft elastic French catheter to remove incrustated diphtheritic plugs from the trachea, and of the larger bronchi, which otherwise would cause suffocation and death. The size of the catheter chosen depends on the age of the patient. Before using it is to be dipped in hot water to make it still safer, and then dried quickly, and passed through the tracheal opening, after removal of the canula, into the trachea as far as it can be made to reach. The catheter is then twisted round a few times, and quickly withdrawn. The plugs of membrane loosened by the catheter are easily expelled afterwards in the act of coughing; and Dr. Warnek has never found that they became suddenly impacted either at the bifurcation of the trachea or in the bronchi so as to cause asphyxia. The repeated application of a sponge wrung out of hot water to the canula opening after the catheterization largely assists the loosening and discharge of the membranes. Of course, if the finer bronchi are attacked, as unfortunately so often is the case, neither this method nor any other is of use; but such as it is, Dr. Warnek firmly believes that to it the comparative success of last

year is due. In any case, it is superior to the method of extracting the tracheal membranes by aspiration by the mouth, as all risk of infection is avoided, and, secondly, a skilled nurse can execute the necessary manœuvres after a little instruction. To prevent the spread of the diphtheritic process to the edges of the tracheal wound, Dr. Warnek has found, since January, 1876, that the direct application of balsam of Peru several times a day, and the protection of a rag soaked in the balsam during the intervals, is a perfect preventive of such an extension. The old plan of treating diphtheria by various drugs, chlorate of potash, borax, etc., has never been of the slightest use, as far as Dr. Warnek has observed, in any of the cases, though often tried. Different forms of spray, inhalation with salicylic acid, lime-water, borax, and turpentine, have all been tried, and abandoned in favour of a simple warm spray of one per cent. solution of common salt, which gives comfort at any rate to the patients, and appears to render the membranes looser and more easily expectorated. It certainly retards the incrustation of the canula with dried secretion. For a long time Bartels used inunction of ung. hydrargyri in all his cases, but the fact that two children with acquired syphilis, who had for some time had mercurial treatment, caught diphtheria while in the hospital and died, put an end to any predilections in its favour. In conclusion it may be worth mentioning that Prof. Bartels, who had had a large field for the study of diphtheria in Schleswig-Holstein, and who published a memoir on the subject in 1866, in the *Deutsches Archiv für Klin. Med.*, entirely abandoned any distinction between diphtheria and croup, regarding them as merely differently localized manifestations of the same disease.—*Med. Times and Gaz.*, Jan. 4, 1879.

Etiology and Treatment of Diphtheria.

Dr. J. OERTEL, Professor of Laryngoscopy in the University of Munich, presents (*British Med. Journal*, Jan. 11, 1879) a report on the outbreak of diphtheria in the Grand Ducal family of Hesse-Darmstadt, which attacked seven of its members, and resulted in the death of the Grand Duchess, the Princess Alice of England, and her daughter, Princess Mary, aged four.

Dr. Oertel gives the clinical history of the case of Princess Alice, and we extract the following remarks on the treatment:—

The treatment was directed, according to the present indications, against the local affections and against the general process. Following the method which I have adopted for more than twelve years, and which I still find the most efficacious in comparison with other modes of medication and therapeutic measures, the tissues attacked by the diphtheritic process were acted on by inhalations of a disinfectant spray in hourly or half-hourly applications, of which each lasted a quarter of an hour or longer. At the same time, it was intended to excite, by the effect of hot steam inhaled at a temperature of from 112° to 122°, an accelerated production of pus and the separation and expulsion of the membranes. Any more violent measures were most carefully avoided, as such only lead to a sanguinolent detachment of the still firmly adherent membranes, and consequently to the more easy entrance of infectious matter into the tissues. The apparatus used for inhalation were arranged in such a way that they gave as little discomfort as possible to the patients. Thus it was possible to employ inhalations comfortably and for long uninterrupted periods at night and during sleep in the cases of the Hereditary Grand Duke, of Princess Irene, etc. The patients occupied a lateral position near the edge of the bed, holding the inhaling tube in the mouth, whilst the nurses kept the apparatus at the proper distance. According to the period of the affection, the following solutions were made use of, viz., a

2.5 per cent. solution of chlorate of potash; a 0.1 per cent. solution of salicylic acid; and in the case of the Grand Duchess, when the septic decomposition began to become alarming, a 0.25 per cent. solution of permanganate of potash. Moreover, during the first days, injections of freshly prepared dilute chlorine-water were made, the solution containing from 25 to 30 per cent. of the official chlorine-water. In those instances in which the fibrinous exudations began to involve the larynx, as in the cases of the Grand Duchess and of the Hereditary Grand Duke, the fluids just mentioned were either exchanged for lime-water, or the latter was inhaled alternately with the others. Repeated experimental investigations and bedside observations lead me to the belief that lime-water is still the best means for the solution of fibrinous membranes, whether these have been produced as a result of diphtheritic inflammation of the mucous membranes, or whether they have been formed through other causes. For it is possible that such membranes might be formed from the effects of ammonia, perchloride of mercury, boiling water, etc.; further, in certain infectious diseases, such as typhoid fever, scarlatina, and, lastly, especially in laryngitis crouposa as a consequence of atmospheric influences.¹ Internally, on the one hand, the fever and the septic infection were combated by the administration of reliable remedies, such as salicylic acid and benzoate of soda in large doses (the Grand Duchess could not take quinine); on the other hand—and on this we laid the greatest stress—everything was done to keep up the general strength and maintain the energy of the heart's action by the administration of strong wines, port wine, arrack, cognac, ethereal tincture of acetate of iron, etc., in so far as the indications were present for their use, and as it was possible to administer them to the patients, especially to the Grand Duchess. In similar cases, I have given repeatedly from five to seven ounces of cognac with lasting success; and for years past I have come to the same conclusions on this subject, and have obtained the same results as Dr. Charles West. It is scarcely necessary to mention that the diet was regulated as much as possible with regard to the fever and to the state of the strength. Besides the administration of the alcoholic stimulants, in the case of Her Royal Highness, when rapid decline of the vital powers threatened to set in, subcutaneous injections of ether were tried as a last resource, without, however, producing a saving effect.

Finally, a remedy is to be mentioned here, which was most urgently recommended to us in more than a dozen letters, especially from England, viz., sulphur. Sulphur acts, according to my numerous experiments and observations, as a mere "scouring powder" in those cases in which the purulent infiltration of the membranes has already taken place and the fibrinous exudation has stopped; in other words, in those cases in which the process is about to expire. In these cases, sulphur, like a scouring powder, wears off by friction the membranes which are loosened by the voluntary and involuntary movements of deglutition, and thus removes them more quickly and without damage to the patient. This is the whole secret of its efficiency, and the explanation of the apparently incontestable successes, which are sometimes observed at certain times of its administration, viz., when it has been noted that the exudation has come already to a standstill. Moreover, the successes are thus explained which quacks have obtained in cases in which a physician has had the patient for some time under his care, and in which the spontaneous expulsion of the extensive membranes in the pharyngeal cavity has not yet or not completely taken place. At the onset of the disease, while the exudation continues, the remedy has no influence what-

¹ Oertel, on "Artificial Croup," *Deutsches Archiv für Klinische Medicin*, 1874, page 202.

ever, and will even prove damaging in the cases of irritable and sensitive patients by its mechanical effects; in short, sulphur has no *specific* action at all. Nevertheless, it was given in the cases of the Grand Duke, of the Hereditary Grand Duke, and of Princess Irene, with the result stated, but was discontinued later, in consequence of the expressly stated wishes of the patients, there being, in our opinion, no special indication for its employment.

As to the treatment of the fever by means of cold baths, with resulting reduction of temperature, I have not seen any encouraging results from this method in diphtheria; and my former experience in this respect has been just now corroborated in another fatal case, in which I was consulted. One is but very rarely enabled to diminish the temperature of the body with lasting effect, and to reduce in some degree the dangers arising from the local affection, from the septic process, and from the participation of the heart; diphtheria and typhoid fever are not alike in this respect. Generally, one succeeds only in reducing the temperature for a few tenths of a degree; and, as the elevation of the fever depends so directly upon the extension of the local process—which fact we had the opportunity of observing most strikingly in all our patients—nothing is gained by this small result toward a more prosperous issue of the disease. For this reason I did not recommend the employment of cold baths in the present case, not to mention the fact that the considerable renal inflammation might have been still further heightened under the influence of the hyperæmia caused by the cold baths, apart from the disease of the respiratory organs.

Against the glandular swellings, fatty embrocations and poultices were ordered, and morphia, etc., were administered to relieve the sleeplessness. For the disinfection of the objects which had come into contact with the patients, permanganate of potash, carbolic acid, sulphate of zinc, etc., were used. The sick-rooms and corridors were most thoroughly disinfected by burning sulphur, by the carbolic spray, by washing with solution of chloride of lime, by fresh papering of the rooms, etc., according to the prescriptions of sanitary science.

In regard to the etiology of the outbreak, Dr. Oertel says: the Princess Victoria, who was first attacked, must have been either infected by some person who was in intercourse with her—and the supposition does not seem to be quite unfounded—or she acquired the disease in the town, in which diphtheria is everywhere propagated. Here especially those slight cases are of importance which I have described as “catarrhal.” The patients might move about while thus affected, as with an ambulant typhoid; and the affection might be cured spontaneously without any medical interference. Nevertheless, such slight affection may convey the germs for the development of the worst croupous forms of diphtheria, if there be a peculiar disposition to such. I have observed this fact repeatedly in the last fifteen years, during which I have studied the disease; and I should like to draw once more very urgently the attention of the profession to this subject. In our case, it has been proved that the six patients first affected had kissed each other shortly before the outbreak of diphtheria was diagnosed in Princess Victoria. By this custom, prevalent among many families, they naturally infected each other with the contagium. Although the Princess was completely isolated immediately after the recognition of diphtheria, and although all kinds of precautionary measures were taken in order to prevent further propagation of the disease, the infection had already taken place, and, after a period of incubation varying from five and a half to eight days, five other members of the family fell ill one after the other, according to their idiosyncrasies and to the receptivity of their system for the diphtheritic contagium. Now, it is very remarkable and deserving the highest attention, that, after the necessary prophylactic measures had been taken and all objects coming into contact with the

patients were thoroughly disinfected, not one other person was attacked out of a number of sixty who lived or had business within the palace, and a part of whom, like the staff of nurses, came into immediate contact with the patients. Had the infectious matter been anyhow propagated within the dwelling itself, or could it have been acquired there; had the air, the water, the rooms, been impregnated with it; had defective drainage, to which etiological recourse is, perhaps, too easily nowadays had; had either been the cause of the development and the extension of the imported contagium, certainly, as is the case in houses infected by enteric fever and by cholera, the propagation of the disease would have been quite different. It would have attacked its victims here and there in the house, amongst high and low, without any regard to the family and to its familiar intercourse. The Grand Ducal family occupied, of course, the best rooms in the palace. Their drawing-rooms and bedrooms were extended in both floors on all four sides of the compass, surrounded everywhere by the sitting-rooms and bedrooms of the numerous household. The staff of servants lived and moved on the ground-floor, in the basement, and in the upper floors; and notwithstanding, out of all these persons, who lived partially under the same conditions as the Grand Ducal family, but occupying less excellent rooms, not a single one has been attacked by the disease. This would be absolutely inexplicable if one of the occasional causes were admitted here. The fact that, out of sixty-eight persons in the house (the Grand Ducal family included), just the members of the family (and no other persons) should be again and again infected by contagium belonging to the house, speaks most decidedly against the supposition (which is, besides, quite contrary to all experience) that the formation of an infectious nidus took place in the palace; otherwise the course of the infection and the time of the propagation would have been much more various in every respect. We have, between the sickening of Princess Victoria and that of the rest of the family, a period of five and a half to eight days. This corresponds completely with the period of incubation of diphtheria. The sickening of the other patients took place within two days and a half. We may, therefore, in accordance with the different idiosyncrasies and receptivity, suppose that the time during which the contagium could have been acquired was so short, that the patients must have become infected nearly simultaneously or in very rapid succession; and that after this no further acquisition and propagation of the poison was possible for some time. If not so, there ought to have been subsequent infections amongst the household and amongst the nurses. The time and mode of the infection being most clearly proved, the result agrees with our propositions as in a correct calculation. If we finally consider the circumstances of the illness of Her Royal Highness the Grand Duchess, here again we have the nidus of infection within the family itself. The mother having passed watchful nights at the bedside of the Hereditary Grand Duke, tortured by the fear of losing her beloved child, embraced him, in spite of all earnest warnings, too early, when he was given back to her. When I left the Hereditary Grand Duke, there were still some remains of the membranes and some suppurating ulcers in his pharyngeal cavity. Unfortunately, I have had repeatedly the opportunity of convincing myself that these diphtheritic residua, and the buccal fluid which covers and surrounds them, can act as germs of the disease, if conveyed to suitable soil. Between my departure and the illness of Her Royal Highness, there was but a fortnight's time, and the complete healing of the Prince's buccal cavity had taken place several days after my departure. Thus, here again, the time from the proposed infection until the outbreak of the disease completely corresponds to the period of incubation of diphtheria. I observed a similar propagation of diphtheria by kissing, in 1869, in the family of Baron von R., at that time in Munich. His

youngest son sat in school next to a boy infected with diphtheria, who died afterwards from it. He got a slight catarrhal diphtheria, and, as in the family of Baron von R., the children kissed their father in the morning before going to school, and in the evening before going to bed, the little boy first infected his father, and the latter again his two other children, who fell ill within the following days with a severe croupous form of diphtheria. These facts were communicated to me at once by the father himself. In this instance also, the necessary prophylactic measures having been adopted, the disease remained limited to these members of the family, and neither any one of the numerous servants was attacked, nor was an infectious nidus formed in this house.

I could quote more instances of the same kind from my observations. The diphtheritic contagium, the parasitical nature of which has become a conviction of mine, is little volatile, is disseminated especially in the diphtheritic membranes and in the buccal fluid, and the infection takes place, in most cases, by its direct transmission either by means of the atmospheric air or by touching objects to which it adheres. Such objects are especially those coming into contact with the mucous membrane of the buccal cavity, etc., as spoons, tumblers, also pocket-handkerchiefs, etc. The possibilities of transmission are so numerous and manifold, that they cannot always be directly demonstrated, even if a careful investigation be made. On the other hand, the propagation of the diphtheritic contagium through the air is much rarer, and we shall have to admit this way of transmission only when we are really in the position of completely excluding all other possibilities. Even when a nidus of infection has been formed—we thoroughly admit the possibility of the formation of such—we shall still have well to consider the possibility of the transmission of the contagium by objects which have been in contact with it, and to which it has adhered. The probability of such an infection is still far greater than that through the air.

The Varieties of Hystero-Epileptic Attacks.

Authors distinguish two kinds of hystero-epilepsy, viz.: (1) Cases in which the hysterical and the epileptic attacks occur separately, never becoming intermingled; (2) cases where the two varieties of attack run into one another, or hystero-epilepsy with mixed attacks. In the present communication Prof. CHARCOT describes only the latter variety. He believes that in this variety we have simply to deal with hysteria in its gravest developments, and that the apparent addition of certain epileptic symptoms to the more usually recognized phenomena of hysteria must not be taken as an indication of the presence of true epilepsy, which is in reality only simulated by the hysterical attack. Such attacks he proposes to designate by the title "hysteria major." Contrary to the generally received opinion that the phenomena of severe hysterical attacks are too confused to admit of methodical description, M. Charcot believes that he has shown that they follow definite laws. Many hysterical attacks appear to run a very similar course; and according as fits conform to this common type, or depart from it, M. Charcot proposes to divide them into complete, abortive, and abnormal attacks. A typical attack, according to him, is composed of four distinct periods, and is preceded by certain prodromata. For a few days before the fit the patient suffers from malaise, loss of appetite, perhaps with vomiting. She becomes taciturn, melancholy; or she may, on the other hand, become excited, requiring careful supervision. Already existing hemianæsthesia becomes more marked, and sometimes the loss of feeling extends to the opposite side. Where it has previously yielded to metallic applications, it ceases to do so. The patient has hallucinations, most frequently seeing animals, such as cats, rats, snakes, etc. The sensitive area so often found in these patients, pressure upon which will at any time produce a fit,

becomes yet more irritable, and a light touch is sufficient to bring on a convulsion. Cramps, tremors limited perhaps to one limb, or sudden jerkings of the whole body, with or without attacks of giddiness, are met with in some cases.

After these have lasted a varying time, the hysterical aura comes on. As it occurs in most cases, it may be thus described :—There is pain in the ovarian region, which passes up to the epigastrium; this is followed by palpitation of the heart, globus hystericus, singing in the ear, hammer-like sensations in the temporal regions, and loss of sight; after which the patient loses consciousness, and the *first* or *epileptoid* period of the fit begins.

This so closely resembles a true epileptic fit that it might easily be mistaken for epilepsy. It begins with tonic convulsions, which rapidly become clonic, and these in their turn give place to stertor. Two facts, however, prove beyond question that we are here only dealing with the semblance of epilepsy :—(1) The fit can be stopped with more or less rapidity by ovarian compression, at whatever period of the attack it may be applied; (2) the same result can be obtained by the use of electrical currents, or by strong friction upon the above-mentioned sensitive zone. None of these means produce the slightest result in the case of a real epileptic fit.

The second stage of the attack in *hysteria major* is that of contortion and of active movement. The contortions consist of curious attitudes, following no law, and having no apparent relationship to one another. A great variety of such contortions are met with, that most commonly seen being the well-known position of opisthotonos, in which the back is arched and the body rests on the head and the heels alone. The "active movements" most frequently consist of rapid and extensive movements of the whole body, or of the limbs only. The most frequent of such movements is one in which the patient sits up in bed, lowering the head until it is between the knees. She then throws herself backwards with great force, plunging the head into the pillow. The movement is repeated perhaps twenty or more times in rapid succession, and is often preceded or interrupted by a piercing scream. In other cases these movements are completely wanting in method; the patient appears to struggle against some imaginary being, or strives to free herself from the bonds which keep her down. She screams, and is sometimes seized with a kind of passion, in which she strikes herself, bites her own flesh, or tears out her hair.

In the third period of the attack, hallucinations constitute the main feature. The patient herself takes part in what she seems to see, and by watching her expressive and animated gestures, and listening to the half-completed sentences which escape her, it is easy to follow the details of the scenes through which she seems to herself to be passing, and in which she appears to take a leading part. The hallucinations are, as a rule, either of a gay or of a melancholy order. If gay, the patient believes herself, for instance, transported to a magnificent garden, where the flowers are generally *red*, and the inhabitants dressed in *red*. In hallucinations of a melancholy nature the patient sees houses on fire, battles, murders, etc.; and almost always red blood forms a prominent feature of the scene.

In the final period of the attack the patient returns to the real world. She recognizes the persons around her; but she remains for a longer or a shorter period in a state of partial delirium, most often of a melancholy order. She sees rats, black cats, crows, etc., which objects nearly always present themselves on the side of the hemianæsthesia, and frighten the patient very much. Sometimes widespread and very painful muscular contractions are met with, which generally disappear with great rapidity; or localized contractions may occur, which are not painful, and which may persist for a long time.

The mean duration of an attack as thus described is a quarter of an hour; but it may be repeated many times at short intervals, constituting a kind of *état-de-mal* analogous to the epileptic *état-de-mal* or status epilepticus, and which may be prolonged for twenty-four hours or more. The points of distinction between the hysterical and the epileptic *états-de-mal* are as follows:—In the latter condition there is always very marked elevation of temperature, which is never present in the former. The epileptic is never influenced by ovarian compression, by irritation of the sensitive zone, or by electrical currents. It is scarcely necessary to repeat that all these means exert a great influence on the course of the hysterical condition.

It must be borne in mind that the convulsive attack of hysteria major, as it has just been described, is not peculiar to patients of the Salpêtrière. It has long been known that imitation has considerable influence in determining the form which an hysterical attack may assume. But this is not the case in the present instance—at any rate, so far as the principal features of the seizure are concerned; for they are met with without noteworthy modification in the case of patients who are treated at their own homes, where the possibility of imitation is entirely excluded. Descriptions of attacks of very similar nature are met with in foreign writings—as, for instance, in those of Dr. Inglis, Assistant Medical Officer at the Edinburgh Asylum, who has recently published a series of observations closely allied to the description given above. Dr. Leidesdorf, of Vienna, has also described cases of the same kind.

The study of former convulsive epidemics, moreover, shows us that hystero-epilepsy has not changed in its essential characteristics as time has gone on. Epileptiform convulsions appear to have been rarely absent in such cases, but the attention of the authors who described these epidemics has usually been concentrated upon the second period of the fit—viz., that of contortions; foremost among which has been the opisthotonic arc. The third period described above as occurring in a typical fit—the period of hallucinations—has usually presented itself in these epidemics under the form of ecstasy, or, as in the case of the "*convulsionnaires*" of St. Médard, as a religious or prophetic delirium.

Of more immediate interest are the descriptions given by classical authors of the attacks of ordinary hysteria. By a comparison of these with the account of a typical fit given above it can be easily shown that a separation of the two conditions is impossible, and that ordinary hysteria or "*hysteria mitior*" can only be considered as an undeveloped form of hysteria major or hystero-epilepsy. In proof of this it will only be necessary to quote certain passages from the works of MM. Briquet and Bernitz. The following passage, which occurs in the middle of the description given by M. Briquet of a hysterical fit, manifestly refers to the epileptiform convulsions of the first period:—

"The face swells, the jaws are tightly clenched so as to produce grinding or chattering of the teeth, the neck swells, the muscles of the neck and those of the chest contract spasmodically, the thoracic walls either remain motionless with their muscles contracted threatening asphyxia (tonic stage), or they move convulsively and rapidly (clonic stage). The muscles of the abdominal walls are affected in a similar way."

Bernitz is even more explicit. He says:—

"At the moment the hysterical cry is uttered, the suffocation appears at its maximum; there is a kind of general tonic spasm, a rigidity of the whole body, sometimes tetanic in its severity; the face is dusky and injected, the neck swollen, the carotids beat with violence, the jugular veins are gorged with blood, the abdomen is slightly distended, and there is marked oppression as though asphyxia

were impending. As a rule, the period just described is of short duration only, the convulsions following immediately on the loss of consciousness."

Who does not recognize in this account at any rate a suggestion of the epileptiform period?

The second period constitutes the principal part of the common hysterical attack; and this is described at great length by these authors. The following is the description given by Briquet:—

"Most frequently, the patients throw themselves about, sometimes as though they wished to escape from assault, sometimes as though they struggled against restraint; in some cases the superior and inferior members move in all directions, and flexion, extension, rotation, adduction, and abduction succeed one another with the greatest rapidity; in others the body moves like a worm; or after being doubled up it is suddenly extended at full length. The head moves forwards, backwards, or to one side; the hands violently clasp the neck as though to tear away some body which causes distress; or they seize the epigastrium as though to tear it, or strike it with closed fists. Sometimes the patient tries to tear her hair out, or to drag the flesh from her face like a mad woman. The muscular power exhibited is so great, that it is with difficulty that several vigorous persons are together able to restrain a slight young girl, who at these times is able to break the iron bars of a bedstead."

Bermitz has also given a description of these attacks, which closely resembles that of M. Briquet just quoted.

The third period is no less clearly indicated in the accounts given by these authors, and M. Bermitz has given to the dramatic attitudes, so often assumed by patients in the stage of hallucination, a name closely resembling that made use of by M. Charcot; for, whereas the latter has made use of the expression "*attitudes passionnelles*," to express this condition, the former applies the term "*expressions passionnées*" to the movements executed by the patient during the attack. He says:—

"At the moment, when, after having persisted for a certain length of time, the convulsive movements have lost their energy, and when the face presents only a slight degree of turgescence, a new phase sets in, in the case of a certain number of hysterical people. The face, hitherto expressionless as in sleep, lights up with very varied expression; the eyes, which in the earlier stages of the attack were closed, are now opened, and the eyelids may be rapidly winked, or the eyeballs perhaps affected with nystagmus. In some cases a variety of emotional states are gone through, from terror, which usually ushers in the scene, to anger, and thence to delight."

The account given by M. Briquet of the *attitudes passionnées* is as definite as that given by M. Bermitz.

The delirium of the fourth stage has not escaped the careful observation of these observers. M. Bermitz thus expresses himself upon this point:—

"At the moment when this expression vanishes (*expression passionnées* of the preceding period), the eyes moisten, and soon tears flow in abundance, accompanied by a storm of sobbing in which the patient completely recovers consciousness. In some patients, instead of a flow of tears, an attack of convulsive laughter sets in; and in others again, an attack of half-sensible delirium, in which they narrate in an incoherent and sometimes unintelligible manner some occurrence which had attracted their attention; or they involuntarily give utterance to indiscreet avowals which may be very compromising for themselves or for others."

Nothing, then, is missing in these descriptions, and when we think that the authors whom we have quoted had only seen simple hysteria—hysteria mitior—

this constitutes a powerful argument in favour of the opinion expressed by M. Charcot, that hystero-epilepsy is only the most intense form of hysteria. Moreover, it argues in favour of the excellence of the method adopted by him, of studying the graver types of the disease before the abortive and milder forms; for it is incontestable that the description of the common hysterical attack is wonderfully cleared up when it is considered in the light of the knowledge gained by the study of hysteria major,

We now come naturally to the consideration of the abortive forms or varieties of the hystero-epileptic attacks. Of these there are two principal varieties:—

1st. The variety in which there is an extension or predominance of one period at the expense of the others, which are either weakened or extinguished. Thus we see the *epileptoid attack*, the *demoniacal attack*, the *ecstatic attack*, the *delirious attack*.

2d. Fits in which elements are introduced that are foreign to the fundamental constitution of the attack, such as somnambulism or catalepsy.

1st Variety: *Epileptoid Form*.—The hystero-epileptic attack is reduced, so to speak, to the first period only, to the almost complete exclusion of the other periods. This phase may be so often repeated as to resemble the *état-de-mal* of true epilepsy. But the various remedies used to modify the hysterical attack check these alarming convulsions, and indicate the hysterical nature of the disease. Moreover, on close examination certain convulsive phenomena will be noticed which belong especially to hysteria, such as the movement of circumduction at the commencement of the tonic phase, the swelling of the neck, the persistence of the contraction during the phase of resolution. Lastly, between the epileptoid attacks there will often be observed some phenomenon suggesting one of the other periods, as, for instance, the opisthotonic arc, or some dramatic attitude assumed by the patient. Nothing similar is ever to be seen in true epilepsy. Moreover, there is never in these cases the same elevation of the temperature as that which always accompanies the *état-de-mal* in epileptic patients.

2d Variety: *Demoniacal Form*.—The essential feature of this variety is the predominance of the phenomena of the second period—the period, namely, of contortion and active movement—to the more or less complete exclusion of the other periods. The contortions are carried to an exaggerated degree of development, and hence the name given by M. Charcot to this form. In fact, the patients present all the chief characteristics of “possession of the devil” as described by ancient authors. The limbs twist into the most extraordinary positions, the features are distorted, the tongue is protruded, piercing screams are uttered, and the fits of passion to which the patient gives way complete the horror of the picture. In this variety the first period is generally represented by a few convulsive phenomena, but the other periods are entirely absent.

3d Variety: *Ecstatic Form*.—Attacks of ecstasy have been described by classical authors, who have not, however, as a rule, seen their connection with the fundamental type of hysterical attacks. Briquet, however, expresses himself thus: “Attacks of ecstasy may be produced in two ways; sometimes they are preceded by the ordinary prodromata of hysterical spasms or convulsions, the ecstatic condition being merely one of the incidents of the fit; at other times the patients fall suddenly into a state of ecstasy without prodromata of any kind.” This variety of attack may be reproduced experimentally by inhalations of ether. It is due to a predominance of the third period, but is sometimes preceded by a few epileptiform phenomena, which betray the true nature of the disease. In some cases, however, this stage exists quite alone, and the attack may consist of one single dramatic action, prolonging itself for a considerable period, thus producing the best type of ecstatic attitude.

4th Variety: Attack of Delirium.—In this variety the delirium of the fourth period constitutes the main element; but it may or may not be preceded by epileptiform convulsions. The prophetic orations of the disciples of St. Médard may be considered as an example of this variety of hystero-epileptic attack.

5th Variety, in which the phenomena of catalepsy or somnambulism supervene on other phenomena of hystero-epilepsy. Sometimes catalepsy or somnambulism occurs spontaneously, without any relation to the hystero-epileptic attack. Briquet considers catalepsy to be a neurosis quite distinct from hysteria, although of a similar order. It may, however, happen that the two states are present in the same individual. Observations of catalepsy and somnambulism are not rare, and all authors who have treated of hysteria have spoken of cataleptic and somnambulistic attacks. The observation reported by M. Mesnet in the *Archives Générales de Médecine*, 1860, and that of M. Moissenet in the first fasciculus of the *Actes de la Société Médicale*, are of special interest in this connection. In these cases the attacks of catalepsy or of somnambulism usually began by violent hysterical convulsions. Often, also, the attack terminated with convulsions; after which the patient completely recovered her senses, without any recollection of what had taken place in the attack. M. Charcot has observed the same sequence of phenomena in the five or six cases he has met with in his private practice.

It seems, then, that when the phenomena of catalepsy or of somnambulism occur in the course of a hystero-epileptic attack, they follow either the first or the second period, taking the place of the third period; or they come in between different parts of the epileptiform stage. It is interesting to remark that in the experiments upon artificially produced catalepsy and somnambulism, which are now being carried out at the Salpêtrière, the onset of the cataleptic symptoms is marked by certain epileptiform phenomena, such as blowing inspiration, noisy movements of deglutition, foaming at the mouth, etc., which again occur in about the same degree at the moment of recovery from the attack.—*Med. Times and Gaz.*, Jan. 18, 1879.

The Treatment of Chorea.

Mr. THOMAS HAYDEN, Physician to the Mater Misericordiae Hospital, strongly recommends (*Dublin Journal of Medical Science*, Jan. 1879) a combination of phosphorus and strychnia in the treatment of chorea. He gives from three to five minims of the ethereal tincture of phosphorus with the same amount of the solution of strychnia (B. P.) three times a day.

The Pathology of Progressive Muscular Atrophy.

The victories of morbid anatomy in the domain of neuropathology are too recent to have effected a final settlement of the points at issue, so that it is not surprising that we see the new positions constantly attacked. The very clearness with which the new school defines its opinions lays it open to criticism; and, as observations accumulate, it may be found necessary to limit the range of some generalizations, so as to bring into accord with greater precision the clinical phenomena and morbid appearances. Carefully conducted pathological investigations must always be fewer than clinical cases, so that it is always possible that all the cases at present grouped under a common clinical title depend upon different anatomical conditions; a source of fallacy which is perhaps not quite often enough kept in view. These remarks have very special application to nervous diseases, in regard to which our ignorance of the physiology of the organs in question exposes us to great risk of error. The researches of Charcot, Joffroy,

Hayem, and others have been generally accepted as having established satisfactorily the dependence of progressive muscular atrophy upon degeneration of the nerve-cells of the anterior spinal horns, and the protests of Friedreich have been disregarded. But recently Professor Lichtheim of Jena has come to the assistance of Friedreich (*Archiv für Psychiatrie*, Band viiii., Heft 3), by publishing a case in which the necropsy was made by Professor Cohnheim, and no lesion was found either in the nerves or cord. The muscles presented the usual appearances of the disease. Lichtheim considers the essential diagnostic features of progressive muscular atrophy to be absence of true paralysis, individual atrophy of the muscles (the affection not involving them *en masse*), and absence of the degenerative reaction to the electric current (*Entartungs-reaction*); and these characteristics are usually admitted. It is therefore at least noteworthy that his case, typical in its clinical phenomena, should be divorced from the accepted anatomical basis; and, without going further, we may say that an observation attested by two such authorities compels us to make some reservation as to the essential and universal pathology of the disease.

Current French literature supplies us with another anomalous case of progressive muscular atrophy which is not typical either in its clinical features or its *post-mortem* appearance, but is worth placing in juxtaposition to the above. This case is reported by M. Debove (*Le Progrès Médical*, November 9th), and occurred under the care of Professor Germain Séc. It differs from the type in the presence of fever, the temperature ranging from 101.3° Fahr. to 105.4° Fahr.; in the affection involving the muscles *en masse*; in the presence of acute pains in the limbs; and in the loss of electro-contractility in the affected muscles, with integrity of sensation and of the various organic functions. The necropsy showed the nerves and cord absolutely healthy, even on careful microscopical examination. The muscular fibres were very slightly granular; but their striation was very distinct, and they were reduced to a third of their volume as compared with normal fibres in the same situation. The nuclei appeared more numerous, but the author suggests that this may have been due to diminution in size of the parts. All the fibres in a section appeared to have undergone the same degree of atrophy, recalling the appearance of the muscles of subjects wasted from long-standing diseases, and contrasting strikingly with the appearances in true progressive muscular atrophy. M. Debove believes that this affection differs from all the forms of muscular atrophy hitherto described, and we join him in the hope that the publication of his case will provoke the publication of other similar observations which may permit us to decide whether it is really a new pathological entity.—*British Med. Journal*, Dec. 28, 1878.

Ozæna and a Simple Method of its Treatment.

Having compared the different views of Sauvages, König, Fränkel, Michel, Zauful, and Jacobi, regarding the etiology of this affection, GOTTSSTEIN states (*Berl. Klin. Woch.*, No. 37, 1878) his own ideas. He recognizes the often observed coincidence of anomalous capacity of the nasal cavity with the occurrence of the disease; but he does not look upon this fact as being an important etiological factor for its origin. He considers the latter due to a process of atrophy in the mucous membrane of the part, analogous to that in the pharynx, described as rareficient dry catarrh of the pharynx (*pharyngitis sicca*) by Wendt in *Ziemssen's Cyclopædia*, and he believes that ozæna is "a constant symptom of that stage of chronic rhinitis, in which atrophy of the nasal mucous membrane has occurred, and in which, probably in consequence of the destruction of mucous glands, a diminution and alteration of the secretion takes place in such a way

that the product of the latter remains, in consequence of its quick drying up, adherent to the mucous membrane, is not removed by the natural forces, and passes over into fetid decomposition." The remedy which the author recommends consists in the simple occlusion of the diseased part by means of a wad-tampon (the part having generally been cleaned before), which is to remain about twenty-four hours in the nose. It does not give rise to any troublesome symptoms, the patients feeling, on the contrary, soon very much relieved by it. One side ought to be occluded only at the time, and the other within the next twenty-four hours, whilst the first remains free during that time. The author has obtained excellent results on fifteen patients thus treated within a very short time.—*London Med. Record*, Jan. 15, 1878.

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*Suffocating Goitre; Laryngotomy between Cricoid and Thyroid Cartilages;
 Catheterism and Dilatation of the Trachea.*

KRISHABER records (*Gazette Med. de Paris*, No. 41, 1878) the case of an Englishman, aged 55, living at Rome, who suffered from suffocating goitre. The goitre was multilobular, mostly developed on the left side; it had grown very quickly, and caused dyspnœa as soon as two months after its appearance. It compressed the lower part of the windpipe, the larynx being intact. External application of mercury, and iodide of potassium internally, having proved useless, and the respiratory trouble having attained very alarming degrees, suddenly an abscess, which had been formed within the goitre, burst into the trachea, and caused extreme dyspnœa. Krishaber at once cut with the thermo-cautery through the goitre and the crico-thyroid membrane, without losing a drop of blood, and, as even his longest tracheal tube was not sufficiently long to pass through the compressed part, he withdrew its *inner* tube and inserted an œsophageal tube *through* the outer canula. This was accompanied by considerable difficulty, but when he finally had succeeded in passing it through the narrow space, immediately a torrent of slightly sanguinolent pus flowed out through it, and the impeded respiration became free at once. There was no subsequent hemorrhage nor any other serious sequela of the operation, the fever was not very considerable, but odynphagia persisted. Gradually larger œsophageal tubes were introduced, and the patient feels now comparatively comfortable. Krishaber intends, however, to restore, if possible, the normal respiration by the natural passages.

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Treatment of Œdema Glottidis by the Introduction of a Tube into the Trachea through the Mouth.

At the Glasgow Pathological and Clinical Society (*Glasgow Med. Journal*, Jan. 1879), Dr. MACEWEN recently showed a man whom he had treated in this way. The patient, in trying to swallow a hot piece of potato, had allowed it to stick in the back part of his mouth, where it lay for some time. It scalded the parts before it could be removed. He was admitted, at one o'clock the next morning, to the Royal Infirmary, suffering from œdema glottidis. It was found that a considerable portion of the mucous membrane of the fauces had been removed, and the parts had a hard thickened feeling, and an appearance as if they had been burned. He was sent into the infirmary by Dr. M'Millan, of Paisley Road, who stated that this was an urgent case, requiring operative interference. It was such a case as would have required opening the windpipe, had the idea of the tracheal catheter not presented itself. Dr. Macewen having previously resolved to try the tracheal catheter in such cases, it was accordingly put in practice. A No. 12 gum elastic catheter was, in the first place, passed through the glottis, and afterwards a rectal tube, with the end cut off and the edges pared.

The passage of the tube caused some excitement on the part of the patient, who drew several deep inspirations, and coughed for about two minutes. Patient held the tube in with his own hand for half an hour, when he drew it out in order to cough as he said; Dr. Macewen at once cleansed the tube and reintroduced it. It was kept in for twelve hours, cleaned and replaced, and at the end of thirty-six hours in all it was finally removed. Patient appeared to get used to the tube, and, at the end of the period mentioned, he slept for four or five hours. The oedema was found to be so far reduced as not to require a longer use of the tube, and the patient made an uninterrupted recovery. Dr. Macewen had previously used the tracheal tube during an operation for the removal of epithelioma from the pharynx and back of the tongue. In this operation he adopted the line of incision, previously used by Dr. Foulis, as described by him in the *British Medical Journal* for Oct. 12, 1878, but, instead of first performing laryngotomy, as Dr. Foulis did, he introduced a tracheal tube, covering the interval between the sides of larynx and the tube with a sponge, so as to prevent any blood getting into trachea during the operation. The patient got chloroform through this tube, and, at the end of the operation, when he regained consciousness, the tube was removed. For this purpose it acted excellently. He had been told, and also saw from the literature of the subject, that tracheal tubes had previously been used in France, but as far as he could at present learn, these tubes were not passed down *through* the vocal cords, as he proposed and practised in those cases. He was certain that *Chaussier's* tube was one which entered a little way into the glottis, and was for the purpose of insufflation, and not a respiratory catheter. Trousseau had declared against their use in cases of croup, as was proposed by Bouchut, but he had not been able at that time to see the original paper by Trousseau on this subject. Dr. Macewen also mentioned that he saw from Malgaigne's *Operative Surgery*, which had just been handed to him, that Desault's proposal evidently conveyed the idea that the tubes were to pass the vocal cords.

It was curious to note that while the tube was in the glottis the patient could drink, and say "yes" and "no" quite distinctly. Dr. Macewen had put a tube into his own glottis, and found that he could breathe through it, though it was by no means a delectable sensation. With regard to the uses of the method, he did not know whether it could be applied in the case of young children, who might not have strength to expel mucus through the narrow tube which would be required for them, but adults had no difficulty in expelling pellets of mucus through the tube, with a sound like that of a cough. The advantages of the tracheal catheter were, that in the country, for example, a tube could be passed easily into the trachea from the mouth in cases where, from objections of the friends or want of assistance, tracheotomy could not be performed; or, it might be passed as a temporary measure pending arrangements for tracheotomy. Again, the moist, warm, interior of the tube would catch dust which might find its way into the trachea by the ordinary tracheotomy tube, and also, as it was kept at the temperature of the body, it would heat the air on its way to the lungs. Dr. Macewen thought, also, that death from chloroform sometimes resulted from the falling back of the tongue over the larynx, and the introduction of the tube would avert that danger. Considerable salivation was set up by the tube in the mouth, but this ceased in a few hours. Of course, such a tube must not be left in long, cases in which a tube would be probably required for a week or more would be better subjected to tracheotomy.

Dr. FOULIS said that he had paid some attention to laryngeal diseases, and he was aware that the catheterism of the larynx and trachea, as it is termed by Malgaigne, was an easy operation. It was in use by Schroetter, of Vienna, and others, for the relief of chronic tracheal strictures. But, with regard to the propriety of

pushing a metal tube into an acutely inflamed larynx, and leaving it there for thirty-six hours, he was at variance with Dr. Macewen. The case seemed to be analogous to that of an acutely inflamed urethra, where a surgeon would hesitate before leaving in a full-sized bougie for thirty-six hours. As to the case of œdema laryngis related by Dr. Macewen, it seemed to him that scarification of the œdematous parts of the mucous membrane would have been at once easy and effectual, and that the use of the tube through the glottis—a place which was not affected in œdema laryngis—was not necessary. He alluded to a case, in illustration of the rapid and spontaneous relief of œdema laryngis, as further showing how a tube might be used in a superfluous manner. He referred to the directions for catheterism of the larynx after Desault and Chaussier, given by Malgaigne in his *Operative Surgery* (translated by Brittan in 1846), and said that the method had evidently been in use by French surgeons in that day, and for some reason had been abandoned. Again, in cases of urgent dyspnoea and acute inflammation of the larynx not amenable to scarification, he thought that a small opening ought rather to be made in the crico-thyroid membrane, through which a tube could be passed and left in for a longer or shorter time. This was an extremely easy operation and very satisfactory; several cases in which he had performed it had healed quickly and with good results; and it afforded that perfect rest to the acutely inflamed larynx which could scarcely be possible with a large tube distending it.

Dr. H. C. CAMERON said he quite agreed with Dr. Foulis in preferring the operation through the crico-thyroid membrane in these acute cases, and he gave details of a case in which he had performed that operation with instant relief; and of another case in which a prolonged spasm had followed interference with the vocal cords. He thought spasm a not unlikely sequence of the proposed catheterism, adducing in evidence of this a case of a child who had introduced a bean into the trachea, and died of spasm of the glottis, the bean not being large enough to cause anything like total obstruction of the trachea.

Dr. MACEWEN, in reply, said, that his opinion had not been changed by the observations of previous speakers. In the case of the urethra, though it was not advisable to introduce a catheter during inflammatory stages, where it was at all possible to avoid doing so, yet, in certain cases it was imperative to introduce an instrument to relieve the bladder, and by leaving this instrument in good results followed; the inflammation not increasing but diminishing. Regarding spasm of the vocal cords, mentioned by Dr. Cameron, as likely to occur, he pointed out that the case mentioned by that gentleman was one in which a small body produced irritation, and was the cause of the supposed spasm; the tracheal tube being introduced beyond the vocal cords, and retained there, he would not fear spasm as a result of withdrawal, but rather paralysis, if anything, more especially if the instrument were retained *in situ* too long; and, on the other hand, as long as the instrument remained *in situ* it was a physical impossibility for the spasm to come on.

Contribution towards the Study of the Respiratory Troubles in Syphilitic Laryngitis.

The following conclusions, drawn by KRISHABER (*Gaz. Hebdomadaire*, Nos. 45, 46, 47, 1878) from a long series of most instructive cases, which are set forth, after a truly excellent clinical lecture on the etiology, the pathology, the dangers, and the treatment of the respiratory troubles in the different stages of syphilis: 1. The syphilitic laryngostenoses show themselves at the most varying periods after infection. 2. Their late appearance is not always, but most frequently, a proof of the presence of an advanced stage of syphilis. 3. The lesions which pro-

duce laryngostenosis in syphilis are different, according to the sudden or slow appearance of respiratory troubles. 4. The sudden narrowing is almost always due to œdema, which accompanies the different specific manifestations; the slow narrowing is most frequently the consequence of a hypertrophic or luxuriant inflammation; sometimes it is due to cicatricial narrowing, and least frequently to the formation of an osseous tumour. 5. The respiratory accidents are the graver, the closer the causating lesions are found to the tracheal region. Tracheal lesions themselves are most frequently fatal. 6. The slow form of syphilitic laryngostenosis may be complicated by œdema and suddenly take an acute course. This complication, however, is not frequent. 7. The acute form of syphilitic laryngostenosis may be successfully and quickly fought by specific treatment, and surgical intervention may be avoided even in cases of apparently imminent asphyxia. 8. The specific treatment must exhibit from the beginning very high doses, and must be continued in gradually diminishing intensity, even after the cessation of the respiratory troubles, in order to avoid recurrences. 9. The slow form gives way to the treatment the more reluctantly, the more insidious and prolonged has been its invasion. 10. The slow narrowing is arrested sometimes spontaneously, and tracheotomy is then not called for; this narrowing, however, never undergoes a spontaneous regressive metamorphosis. 11. If there be, in consequence of cicatricial narrowing, any tendency to obliteration of the larynx, this will take place, whatever might be done; the opening of the air-passages, and the uninterrupted wearing of the canula, are imperiously demanded in this case. 12. The results of the mechanical dilatation of the larynx have not yet received their consecration by time. 13. The syphilitic vegetations of the larynx may be destroyed or removed like other non-specific laryngeal growths. 14. The differential diagnosis between simple and syphilitic vegetations is rather easy; but there are difficulties regarding the differential diagnosis of syphilitic, tuberculous, and carcinomatous neoplasms. 15. In all forms of syphilitic stenosis, cough is rare, and pain little marked. 16. The conservation of the voice is compatible with the gravity of the evil. 17. Except the case of growth, the local treatment of syphilitic laryngostenosis is useless. 18. In the overwhelming majority of cases, the choice of treatment is to be made between specific medication and tracheotomy (or laryngotomy). In certain cases both methods will find their employment. These are the important conclusions of Krishaber's paper.—*Lond. Med. Record*, January 15, 1879.

Symptoms of the Third Stage of Pneumonia.

In a clinical lecture at La Charité (*Gaz. des Hop.*, Oct. 15) on "The Signs by the aid of which we may diagnose the Passage of Pneumonia from the Second to the Third Stage," Prof. HARDY, after relating the case of a woman in whom such diagnosis had been verified by the autopsy, observed that among the symptoms by which, in certain cases, the passage of the lung from red hepatization into gray hepatization may be indicated, the character of the expectoration may be mentioned in the first place. In the third stage of pneumonia, in place of being coloured, viscous, and adherent to the vessel containing it, the expectoration consists of a whitish or grayish secretion, somewhat resembling pus diluted with water. Unfortunately, at this period of the disease, expectoration is often suppressed, so that this valuable element of diagnosis is wanting. As to the opinion held, that in this last phase of pneumonia the expectoration is of a plum-colour, that is an error, as this colour is also met with in the second stage as well. The cough presents nothing special; beyond that in general it is not strong or intense, and sometimes the time comes when it ceases altogether. The dyspnoea is very great, as expressed by a sense of suffocation as well as by the

great frequency of the respiratory movements. But this is a sign of no great value, as it is also met with during the second stage when the pneumonia is very extensive. With respect to the general symptoms, one of the best characteristics which may aid our diagnosis is the occurrence of shiverings, not very intense, but well marked, and which are repeated two or three times within the space of several hours. It is especially in very bad cases that this phenomenon is observed. The fever is always very intense, the pulse oscillating between 130 and 150, and being also small and irregular. This sign, however, has no absolute value, for it is also met with during the second stage, when the disease is about to terminate fatally. The temperature also does not aid the diagnosis, it being during the third stage sometimes greatly raised and sometimes a little diminished. Upon the whole, it would seem, at this epoch of the disease, to tend towards becoming lower; and from 40° and 41° C., which it had been for some time in the present case, it descended during the last period of the patient's life to 38.9°. If this observation becomes confirmed by others, it will be of great value in establishing the passage of pneumonia to the period of suppuration. Sometimes the aspect presents quite a special character. Ordinarily, indeed, the features are changed, and the face is pale and leaden, resembling sometimes the appearance of patients during the last stage of heart disease. In some, this colour is contrasted by a bright red, limited to the cheek-bone of the affected side, and due to paralysis of the branches of the sympathetic. It is not uncommon also to meet with some amount of disturbance of the intellectual functions, a subdelirium generally existing.

These phenomena are far from being quite characteristic, and, with the exception of the repeated shiverings, the sero-purulent expectoration, the frequency and irregularity of the pulse, and the change in the features, are of no great value. The physical signs are absolutely the same in the two stages, for in both the lung is solidified, and in both the solidification gives rise to identical phenomena.—*Med. Times and Gaz.*, Dec. 7, 1878.

The Diagnosis of Myocarditis.

Dr. H. RUHLE (*Deutsches Arch. für Klin. Med.*, Band xxii) has had the opportunity of observing a considerable number of patients with what he diagnosed to be diffused chronic myocarditis, and in which the *post-mortem* results often verified the diagnosis. By Koster's plan of the usual method of making vertical sections of the heart in this way, the existence of myocarditic foci is proved. If these foci be not very large or numerous, they generally are found on the surface, their places of predilection being either the lower two-thirds of the anterior surface of the left ventricle, or the superior two-thirds of the posterior surface of the same ventricle; but they are also often found in the papillary muscles, especially in the left papillary muscles of the bicuspid valve. Hence these changes occur principally in the left ventricle. During their lifetime, the patients present the symptoms of an uncompensated valvular disease; the left ventricle cannot do its work, and the pressure rises in the venous system. Accordingly, we meet with œdema, hyperæmia, and hemorrhages in different organs, dyspnoea, digestive troubles, and decrease of urine. The dulness of the heart is enlarged in most cases, especially towards the left. The apex-beat can be felt at first, but it is very irregular as to strength, and disappears altogether at a later period. The sounds of the heart are clear, but the first is generally indistinct, and the second, over the aorta, very weak. A systolic murmur is often heard at the apex of the heart, but its sounds are quite irregular in strength and succession. The pulse-beats corresponding to the heart are irregular and unequal, which is a character-

istic symptom of chronic diffused myocarditis. The prognosis of the disease is always unfavourable, and more so if the diuresis be sparing. Ruhle's treatment of this disease is as follows. During the first stage, the patient must be kept quiet, eat milk food, apply ice to the region of the heart, take iodide of potassium, and eventually digitalis. During the second stage, the patient is treated with digitalis and stimulants (*e. g.*, wine, beef-tea, ether tinctures). Notwithstanding all these means, however, Ruhle never succeeded in making the pulse regular, even for a short time.—*British Med. Journal*, Jan. 18, 1879.

Valvular Aneurisms.

Dr. BIACH (*Wiener Med. Jahrbuch*, 1878) is of opinion that a valvular aneurism can only be suspected, but never diagnosed, during the patient's lifetime. The valves of the left heart seem much more disposed towards the formation of aneurisms than those of the right, especially the bicuspid valve. In some cases, we find aneurism of several, even of all, valves in the same individual. This disease often originates in endocarditis, which in its turn may be caused by the abscesses which often form in pneumonia and attack the aortic valves. Insufficiency or stenosis of a valve may cause an aneurism in any other valve by making the action of the heart irregular. The wave of blood, which beats with more force on one portion of the valve than on another, may cause the former to dilate and form an aneurism. In some cases, either congenital or acquired narrowness of some portion of the aorta or pulmonary artery may produce an aneurism of the semilunar valves of these vessels. Any pressure coming from outward, such as a tumour, etc., may contribute to the formation of aneurism by compressing the vessels.—*British Med. Journal*, Jan. 4, 1879.

Treatment of Diseases of the Colon.

Dr. DUBOIS (*Scheizer Correspondenzblatt Memorabilien*, 1878, ix. Heft), after giving a rapid enumeration of the diseases of the colon where it is indicated to inject large or small quantities of water, adds some practical hints on the different ways of administering the fluid. There are two different kinds of enemata employed. 1st. The simple enemata, which are used in cases of constipation when it is found necessary to remove fecal masses from the sigmoid flexure, the cæcum, or the rectum, in cases where the mucous membrane of the rectum is diseased, and it is indicated to bring it into contact with water or medicine. 2d. Very large enemata, which will be found efficient in cases where the water ought to be injected high up into the large intestines, or whenever there exists a catarrhal affection of these portions of the intestines. Some patients can bear, without incurring pain or danger, enemata of 1000 to 1500 cubic centimetres of water, but in others such a large volume of fluid would either prove very dangerous to the intestines, or could not be injected on account of the great irritability of the intestinal muscles. In such cases, where it is of obvious necessity to inject a large bulk of liquid, the author advises the following method.

Tepid water is injected till the patient feels a violent strain. The syringe is then removed, and the patient slowly changes under the bed-clothes from his right or left side to crouching on his knees and elbows. After one to two minutes, the former position is again assumed for a short time, and then the patient lies down upon his back. The same operation and changes of posture are then repeated, and defecation generally ensues in about ten minutes or half an hour after the injection has been given.

This method is indicated: *a*, in cases of constipation where purgatives and the usual enemata can either not be given, or have proved powerless; *b*, in cases of

coprostasis where fecal tumours, varying in size, can be felt in the cæcum or other parts of the large intestine, and have sometimes been mistaken for ovarian cysts. Here purgatives given by the mouth are either vomited or have no effect; c, it is well known that inflammations of the vermiform process are mostly caused in healthy individuals by accumulation of feces. Whenever, therefore, a slight tenderness and increased resistance are felt in the iliac region, especially in persons who have suffered from typhlitis before, a bulky injection will be found very useful in preventing the inflammation and removing the feces. Narcotics should also be used in those cases; d, in cases of general or local peritonitis, when constipation and accumulation of gases in the abdomen have been produced by paralysis of the intestinal muscles; e, in cases of diarrhœa caused by obstipation or accumulation of feces; f, in abscesses of the intestines, dysentery, etc.—*London Med. Record*, Jan. 15, 1879.

Maeler on Chronic Dysentery treated by a Solution of Alum.

The patient (*Allg. Med. Centr. Zeit.*, No. 102), a workman, aged 48, had been suffering for some time from repeated attacks of dysentery which were combined with violent colic. The motions were liquid, and contained a great quantity of pus, mucus, and blood. The cause could not be detected by examination of the rectum and palpation of the abdomen. The patient was then treated with a solution of alum, which was injected into his bowels immediately after each evacuation, and which he was directed to retain as long as he could. This remedy proved successful, the patient only complaining of a burning pain in the rectum, while it was being thrown up, but feeling much relieved afterwards. The motions then gradually began to present a better appearance, no more blood or pus was noticed in them; they became more solid, and a fortnight after the first injection had been administered, the patient was dismissed as cured. The strength of the solution was four teaspoonfuls of alum to a pint of water.—*Lond. Med. Record*, January 15, 1879.

Arterial Pulsation of the Liver.

Dr. ROSENBACH, of Breslau, contributes a paper on the arterial pulsation of the liver to the *Deutsche Medicinische Wochenschrift*, for Oct. 5, 12, and 19. Hitherto, he remarks, a systolic pulsation of the liver in all its parts, but especially in the right lobe, has been held to indicate tricuspid insufficiency, as being produced by the systolic regurgitation into the adjacent large veins; and this pulsation was easily distinguishable from the mere impulse communicated to the liver in such affections as cardiac hypertrophy, abdominal aneurism, etc. Moreover, the importance of this hepatic pulsation was further enhanced by the observations of Friedreich, that it is one of the earliest symptoms of tricuspid insufficiency, earlier even than pulsation of the jugulars. The following case, however, shows that there may exist a pulsation of the liver in no way differing from that produced in tricuspid insufficiencies, while yet no sign of valvular disorder existed during life, nor could any such be traced after death; hence another explanation of its cause becomes necessary.

P. A., aged 18, a compositor's apprentice, who had in former years had several attacks of acute rheumatism, was admitted into the hospital on the 5th of May, on account of asthmatic dyspnoea with severe palpitation of the heart. His complexion was sallow; respiration 30, and laboured; pulse 84, jerking; arterial tension somewhat diminished. There was distinct pulsation in even small peripheral arteries, while on both sides there was violent beating of the carotids. The venous circulation was in every respect normal; no œdema, no ascites. The

liver could be indistinctly felt immediately below the ribs. There was strong systolic pulsation extending to the entire sternum, the præcordial and epigastric regions, though superficial in the latter situation, and easily obliterated by pressure. Cardiac dulness began between the second and third ribs, extending three-fourths of an inch to the left of the mammillary line and to the right margin of the sternum. At the apex there was a blowing systolic and faint short diastolic murmur, while at the upper part of the sternum there was a long diastolic and a faint, short systolic murmur. The heart sounds extended into the carotids, to the palmar arch and femoral artery. On percussion there was marked dulness of the lower portion of the lungs, from one inch below the inferior angle of the scapula to one-third of an inch above it, and almost encircling the thorax; in the same area the breathing was feebly vesicular—otherwise the respiratory sounds were normal. His appetite was good; the bowels were regular; there was no albumen in the urine, which was rather high coloured. At first, under generous diet, the patient's condition slightly improved, especially after the removal from the left side by aspiration of about a pint of fluid. From the 15th to 20th May, there existed between the fourth and sixth ribs, and extending from the right edge of the sternum to near the left axilla, loud pericardial and pleuritic friction, after the disappearance of which the patient's condition grew steadily worse. The asthmatic paroxysms increased, œdema of the feet and ascites set in, and the pleural effusion increased. While there was no change in the condition of the heart and vessels, a marked alteration took place in the liver. It had gradually and steadily enlarged, so as to be distinctly felt projecting from under the ribs, and a slight pulsation throughout its substance became perceptible. On the 25th May, it formed a hard well-marked tumour, whose lower margin extended one-third of an inch below the umbilicus, and presented throughout its extent a marked systolic pulsation. A stethoscope applied on the right side of the epigastrium was lifted an inch high by the impulse; the hand pressed into the epigastrium was thrust outward at the systole; the impulse, however, having not only a forward but also a lateral direction. To the fingers placed over the epigastrium the sensation was as if the liver floated in the ascitic fluid, and was rhythmically thrust in every direction at the heart's systole. This pulsation of the liver continued very distinct until death, on the 16th June, and though the ascites increased, it did not diminish but became rather more perceptible. Even to the end there was no jugular pulse.

Necropsy.—The pleuræ were partially covered with fibrinous exudation, containing each about half a litre of yellowish flocculent fluid. The pericardium was united throughout its extent with the heart. The heart was considerably dilated, containing fluid blood in both sides; its muscular substance on section was spotted, of a light yellowish brown, especially on the left side. The thickness of its walls on the right side was 0.27 to 0.35 inch (7 to 9 millimetres), on the left side 0.51 to 0.78 inches (1.3–2.0 cen.). The tricuspid valve was normal, but the mitral valve was thickened throughout and insufficient; there was also thickening and insufficiency of the aortic semi-lunar valve. The origin of the coronary arteries was dilated; there was marked fatty degeneration of the substance of the left ventricle. Both lungs presented red induration; they were devoid of air through compression in their lower portions. The patient was, therefore, on admission the subject of extreme insufficiency of the aortic valves with inflammatory effusion into both pleuræ.

The course of the case may be divided into two stages by the occurrence of pericarditis. At first the valvular defect was sufficiently compensated, but the subsequent pericarditis, leading as it did to complete obliteration of the sac of the pericardium, produced extensive and rapid disturbance of compensation, as

was shown by the œdema, ascites, and enlargement of the liver. Hence, also, the obstacles presented to the flow of the venous blood were largely increased, producing venous stenosis. The second stage was marked, in addition to the condition of the stenosis, by a marked systolic pulsation of the liver, the explanation of which is impossible, on hitherto accepted grounds, seeing that all signs and symptoms of tricuspid insufficiency were completely absent, a circumstance clearly established by subsequent examination. Now, if we consider the extreme force with which, in cases of aortic valvular insufficiency, the blood is propelled into the arteries, so that the impulse is felt, not only by the entire body, but is perceptible even in the capillaries, we can conceive that a marked pulsation is possible also in the liver. If this is, however, not observable in all such cases of valvular disease, it is obvious that in certain cases, as the present one, there is a coincidence of favourable circumstances giving greater prominence to this phenomenon of hepatic pulsation. As such, we may regard, in the present case, the considerable enlargement of the liver while the left ventricle yet retained its full force and activity; and also in the constriction of the aorta (the width of the aorta is given as 8 centimetres). The tense and enlarged liver, easily examined by pulsation, could, therefore, reproduce the first impulse of the heart all the more readily, since the difference between the strong systolic and feeble diastolic beat was unusually great, owing to the extensive regurgitation, and as indicated by the strong, short, jerking pulse. The relatively rare concurrence of such favourable circumstances probably explains why pulsation of the liver has not hitherto been observed in cases of purely aortic insufficiency. For in this valvular disorder, venous stenosis generally occurs only after the left ventricle has to a great extent lost its contractile power; or, should it still continue active, when the arterial walls have lost their elasticity, and so their function has become impaired. Since, therefore, venous stenosis, and consequently enlarged liver, is a result of diminished arterial pressure, this organ usually presents a sufficiently large surface for palpation only then when the heart's beat has become too feeble to be transmitted into and through the hepatic vessels. But in the present instance matters were entirely different. Venous engorgement and stenosis had taken place in consequence of the pericarditis and subsequent obliteration of the pericardial sac, and also of the pressure of the pleuritic exudation, and while yet the left ventricle retained almost its full force and activity, and the aorta yet retained its proper elasticity. Hence the concurrence became possible of hepatic enlargement and increased arterial pulsation, the latter rendered transmissible to a distance by the normal elasticity of the arterial walls.—*London Med. Record*, Jan. 15, 1879.

Surgery.

On the Difficulty in Catheterizing the Œsophagus.

The patient, who is the subject of the observations in the *Archives Générales de Médecine* for September, was under the care of M. DUPLAY, in the Hôpital St. Louis, suffering from cicatricial stricture of the gullet, due to the swallowing of vitriol. Many efforts were made to pass an instrument into the stomach, but without avail. On admission, two grammes (thirty-one grains) of bromide of potassium were given daily, and this subsequently was increased to four. Every attempt at complete catheterization having failed, last January, that is two months

after first admission, a hollow sound was introduced. This passed for thirty-four centimetres (about thirteen inches), as on former occasions, and then stopped. It was then perceived that during inspiration and expiration air passed through the instrument. It was undoubtedly in the trachea; and an examination with the laryngoscope showed that the opening of the glottis was very large, and although a full size instrument was in the windpipe, respiration was freely carried on. After this the laryngoscope was always used when an attempt was made to catheterize the œsophagus, and with complete success, as the patient was finally dismissed with the stricture fully dilated.

M. Duplay publishes the case to show how long an œsophageal sound may be passed into the air passages without its whereabouts being recognized. In the case reported, this was due partly to the tightness of the stricture, which was situated at the opening of the œsophagus, and also to the exceptional tolerance of the patient, who bore a sound passed into his windpipe; this tolerance M. Duplay thinks being due to the use of the bromide of potassium. Attention is also drawn to the usefulness of practising catheterization with the hollow sound, and to the importance of laryngoscopic examination during the treatment of these cases.—*London Med. Record*, Jan. 15, 1879.

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Complete Congenital Branchial Fistula cured by Iodine Injections.

This case is reported, by LETIÉVANT, in *Le Progrès Medical*, Nov. 16, 1878. The patient was sixteen years of age, and first came under notice April 10, 1878, at the Hotel Dieu, Lyons, suffering from a sero-purulent discharge which escaped from an opening situated in the right subclavicular region. This little orifice was noticed by his mother when he was born; but there was no discharge until the age of three, when measles seemed to have acted as an excitant. From that time things had remained in the same condition, the fistula never giving rise to pain, merely causing fits of coughing. An examination revealed an elongated cord-like tumour, extending under the skin from the inner extremity of the right clavicle, along the internal edge of the sterno-mastoid muscle, to the level of the upper border of the thyroid cartilage. The swelling decreased in size from below upwards, and appeared to be lost in the deeper structures of the region. It was soft and movable, rising from the larynx during the movements of deglutition. The skin was quite healthy, but at the lower part of the tumour was a small red orifice about the size of a quilting needle; during deglutition, by the act of its elevation, this opening became invaginated in the skin. By pressure, creamy, or sanguineous pus could be squeezed out, causing the disappearance of the little swelling at the lower part of the cul-de-sac. A microscopic examination of this pus showed leucocytes, red globules, and cylindrical epithelial cells. On introducing a stylet, it could be passed upwards for eight or nine centimetres, but no superior opening could be detected, although when a certain point was reached, the coughing was induced. At the lowest part, in connection with the orifice, was situated a small rounded pouch. A milky injection shortly found its way into the mouth, thus implying a direct communication with that cavity. A laryngoscopic examination, in conjunction with the injection, revealed a small opening below the right tonsil. The right posterior pillar of the soft palate was absent, being replaced by two papillæ, of which the superior and posterior was perforated by a small orifice, only visible when liquid was injected by the fistula. The rest of the mouth, the lips, the face, and the neck, presented no malformation; there was no deafness nor deficiency of hearing on the affected side. The family history showed a large amount of congenital deafness; thus the maternal grandfather, one of the uncles, and a cousin were thus affected; the father and brothers of the patient were quite free from this defect.

When injecting sapid fluids into the fistula, no sense of taste was experienced until the internal opening had been passed. M. Letiévart, taking into consideration the relations of the fistula to the larger vessels of the neck and the pneumogastric nerve, and bearing in mind the difficulties that would be met with in an attempt to dissect out the sinus, decided to try the effects of iodine injections. From May 6th to June 3d, sixteen injections of tincture of iodine with an equal quantity of water were made; the pain caused by this measure was generally only slight. At the latter date there was no longer suppuration; the cord was only a little painful on pressure. June 16th. Patient appeared cured. Both the external and internal orifices were closed. The fistulous tract felt merely a small subcutaneous cord. There was neither pain nor discomfort on pressure. Discharged. —*London Med. Record*, Jan. 15, 1879.

Gastro-Enterotomy for Intestinal Obstruction.

At a recent meeting of the Clinical Society of London (*Med. Times and Gazette*, Jan. 18, 1879) Mr. LAWSON read the history of a case of intestinal obstruction, which had been under the care of Dr. Cayley and himself at the Middlesex Hospital, and for which Mr. Lawson performed gastro-enterotomy. H. C., aged twenty-three, a compositor, was admitted into the Middlesex Hospital under the care of Dr. Cayley, on June 3, 1878. For the last six weeks he had been somewhat costive, and had suffered occasionally from colicky pains. The bowels acted every day, but the motions were scanty, and composed of small hard lumps. On May 29, while at work, he was seized by an attack of colicky pains much more severe than the previous ones. In the evening he vomited, and he states that the matters brought up had a fecal smell. The bowels had acted that morning, but there was no motion afterwards up to the time of his admission. During the following three days he had frequent retching, but brought nothing up, and he took no food except a little milk; the colicky pains continued unabated. His medical attendant had given him sulphate of magnesia, and several enemata. State on admission: The countenance was natural and free from anxiety; the tongue was thickly coated; there was a slight blue line on the gums of the lower jaw. He complained of a twisting pain in the belly, especially on moving. It was most marked in the umbilical region, and though constant, was aggravated by frequently recurring paroxysmal exacerbations. The abdomen was considerably distended, with some tenderness on deep pressure in the umbilical region. There was marked fulness in the epigastric region, below which there was a slight depression. On percussion there was tympanitic resonance in the epigastric, right hypochondriac, lumbar, and iliac regions. In the umbilicus the resonance was less markedly tympanitic on the left side; there was dulness in the iliac and lumbar regions, but it was noticed that the position of the dulness sometimes shifted across to the right side. The circumference of abdomen at the umbilicus was thirty-three inches. The patient belched up wind, but had passed none per anum since the 29th. The urine was abundant; specific gravity 1037, free from albumen. Respirations 24; temperature 99.2°; pulse 108. The patient was placed on his elbows and knees, a flexible tube passed as high as was practicable, and an enema of warm water administered by a syphon from a vessel placed eighteen inches above the level of the anus. It was not found possible to administer more than two quarts of fluid, which caused considerable distress from a feeling of distension. The enema returned quite free from fecal matter. Digital examination of the rectum gave negative results. Ordered extract. opii gr. ss. every four hours. After two pills, the pain was relieved, and the patient fell asleep. The patient continued to get worse; the pain increased, the belly became more distended; and on June 5 he vomited a flaky yellow fluid with

a distinct fecal odour. On June 6 the symptoms were still unrelieved, notwithstanding repeated doses of opium, and repeated enemata. He continued to vomit stercoraceous matter. The temperature had risen to 101.2° ; the belly was more distended, and there was tenderness. As peritonitis was beginning, it was thought that further delay in resorting to an operation was undesirable; it was therefore decided that a search should be made for the obstruction. The patient having been placed under ether, Mr. Lawson made an incision in the median line of abdomen, commencing just below the umbilicus. The coils of intestine were seen greatly distended, and with a red velvety appearance, but still shining, and without any deposit of lymph on them. On passing his hand into the abdomen, Mr. Lawson felt a portion of the intestine tightly distended to beyond the size of the adult stomach, and extending from just below the liver on the right side downwards to the right iliac, and across the belly to the left iliac region. From the fixity of the intestine he concluded that it was the cæcum. He failed to detect any band or constriction, or collapsed portion of the intestine. He now endeavoured to unravel the small intestine by withdrawing it, and replacing it through the wound coil by coil; but this proceeding was found impracticable, in consequence of the excessive distension of the gut. A considerable portion of the intestine was therefore withdrawn from the abdomen to give room for further exploration; and on again introducing the hand, nothing could be detected but the enormously distended piece of intestine which was supposed to be the cæcum. This portion of the viscus was now punctured with a large trocar close to the lower end of the wound in the abdominal walls, and a large chamber-vessel full of liquid feces was drawn off. The canula was now withdrawn, and a large India-rubber tube, about six inches in length, and of the size of the finger in circumference, was introduced through the opening the trocar had made, and the end of the tubing was brought out through the bottom of the wound in the abdominal walls. A single suture was applied to one edge of the opening in the intestine, and fastened to the lower cut edge of the abdominal wall, but owing to the fixity of that portion of the intestine, it was found impossible to draw it sufficiently forward to unite it completely to the edges of the external wound. The intestines were then, after some difficulty, returned, and the wound closed with sutures in the usual manner. The parts were dressed with carbolic oil and a compress, and a well-fitted bandage applied to keep the whole *in situ*. During the progress of the operation, as the intestines were drawn from the abdominal cavity they were covered with flannel, made moist and warm by being wrung out of hot water. This flannel happened to be quite new, and consequently the fluff from the flannel adhered to the peritoneal surface and remained attached when the bowels were replaced into the abdomen. The small intestines, as before stated, were greatly distended, so as to approach in size the normal colon. In returning these into the abdomen, the peritoneal coat in two places cracked to the extent of about three-quarters of an inch. Each of these peritoneal wounds Mr. Lawson closed with a continuous suture of fine silk, such as is used in operations on the eye, taking care that the needle perforated only the peritoneal covering, and did not wound the muscular coat of the bowel. The patient was then returned to bed. A profuse discharge of liquid feces continued to take place through the tube. The next morning his pulse was 160, small and sharp; temperature 103° ; belly much distended; has had no more vomiting, and has passed flatus per anum. A free discharge of feces continues through the tube. He continued to improve from this date; he had no further vomiting; and on the 11th, the fifth day after the operation, he passed a copious semifluid motion per anum. After the stitches were removed, the abdominal wound gaped a little, but the edges were kept in apposition by adhesive plaster and a bandage round the abdomen, and ultimately

the wound united by granulation, leaving at the lower end a small fistulous track, through which a small quantity of feces continued to escape. The patient left the hospital for the Eastbourne convalescent establishment in the second week of October, but, after having been there a fortnight, he was sent back with symptoms of obstruction, and distension of the belly. A large enema gave him relief, but, unfortunately, he has had several recurrences of obstruction. The bowels seem to have lost much of their power of propelling onwards their contents, and, as they have probably become more or less adherent to the walls of the abdomen and to each other, a complete block may at any time occur, for which a right lumbar colotomy will afford the only chance of relief.

Dr. MURCHISON said the case reminded him of one which occurred in Scotland. Both were illustrative of what might be done in certain cases with peritoneal injuries. There a boy while bathing had his abdomen ripped open, and thus it remained for some time; the bowels, though covered with sand, were, after being carefully washed, returned, and the boy did well. He would like to know what in the present case was supposed to be the nature of the obstruction. The patient was a young man; there was no history of cancer or anything of that kind, there was no intussusception, but the obstruction was low down in the colon.

Mr. LAWSON thought the obstacle was caused by a kick in the intestines, which had been got rid of by the manipulation.

Dr. CAYLEY said that before the operation the seat of the obstruction had been uncertain; but, though evidently low down, it must be remembered that two quarts of fluid were retained. The hard swelling in the left groin could hardly be fecal.

Mr. CRIPPS spoke of the case of a boy which had occurred in the Great Northern Hospital. He had been the subject of an accident, and since that time had suffered from colicky pains, but this was succeeded by sudden and intense pain, with vomiting and constipation. He thought this was due to mechanical obstruction, and found he was compelled to open the abdomen. This was done by a small incision, and the intestine was gradually drawn to a certain point. Here he found the obstruction, which he relieved, and returned the bowel. The patient did well for a few days, but after that died from peritonitis. He thought the operation had been too long delayed, as the opium at first exhibited seemed to mask the disease.

Mr. BRYANT congratulated Mr. Lawson on the result of his case, one which could have hardly been anticipated. The history, he thought, pointed to an acute obstruction added to some chronic trouble, such as might be caused by a matting together of a part of the intestine by previous peritonitis. A point of great importance in these cases was to operate early—in fact, immediately a mechanical obstruction was diagnosed. No doubt in this case lumbar colotomy would have been sufficient, though this could hardly have been anticipated; but he thought that opening the bulging intestine, after the manner of Nélaton, would have been here the best procedure.

Mr. THOMAS SMITH allowed that waiting was prejudicial; but the first point was to make a diagnosis, and this was often most difficult. He recalled a case where sudden pain and vomiting had set in. The patient remained in the hospital for fourteen days, and died unrelieved, for at that time abdominal section was not readily undertaken. The post-mortem disclosed an acute enteritis with a sloughing patch of intestine, such as no operation could have benefited. Three days ago he saw a boy who had been attacked, about Christmas, with vomiting and sudden pain. The abdomen was not much distended, and mucus was passed per anum. He had diagnosed an enteritis, but after death, a band was found strangulating a diverticulum of small intestine. In another case there had been

the same symptoms of acute strangulation, where he had diagnosed volvulus. An operation through a small opening was performed; a band was found, and the intestine released; but the patient, who had taken the anæsthetic badly, died in half an hour—from the effect of the ether, as he believed.

Mr. HULKE quite agreed that the diagnosis was often a matter of great difficulty; the acuteness of the vomiting and the seat of the pain he had often found fallacious guides. In one case, where the symptoms were acute and severe, they were found to depend on an abscess in Douglas's pouch. In a second, where the vomiting was immediate and uncontrollable, the obstruction was at the lower end of the small intestine. Having had an opportunity of witnessing the present operation, he still believed the obstruction to have been caused by the band constricting the hepatic flexure; and the cause of this band was to be sought in the history of the burn, and its attendant suppuration—conditions which were known to be often followed by peritonitis or ulcer.

Mr. HEATH criticized the treatment of the distended intestine by puncturing it with a trocar and inserting a drainage-tube, while no attempt was made to attach the intestinal wall. Escape of the intestinal contents might so easily have taken place into the peritoneal cavity. He also thought that the probability of a band constricting the colon in some part of its course was great. He referred to Mr. Teale's treatment of a similar case, who had, without opening the intestine, closed the abdominal wound and done a lumbar colotomy, and thought that this would be a better treatment to adopt in future.

Dr. BUZZARD believed that the future history of this case would be still more interesting. The fact that two quarts of fluid were retained negatived, in his opinion, the idea that the obstruction could be very low down. He quoted the case of a young man who had recovered from two attacks of obstruction—one of which, at least, he believed to have been dependent on a strangulating band—under a free administration of opium.

Dr. BURNEY YEO had received an altogether different impression from the history. A distended condition of the intestine had been described which it would have been useless to treat by opium—a treatment which, in his opinion, had been too often fatal.

Mr. HOWSE thought that the mere emptying of the intestines was often enough to relieve obstruction where a band was the cause of the strangulation, just as in a strangulated hernia evacuation of the contents of the bowel often allowed replacement to be effected. He allowed that the diagnosis of such cases was often difficult, but treatment of a clear case of mechanical obstruction by opium could only be prejudicial. After tapping it was a serious objection that the puncture so often allowed oozing to occur. It was of little use then to sew up the hole; the punctures by the needle increased the difficulty.

Mr. HULKE entirely agreed with the remarks of the last speaker, that to tie the puncture often added to the danger, for, in spite of all care, the intestinal wall was most easily cut through by the ligature.

Mr. CROFT considered that here the value of antiseptic precautions was most valuable. Flannel, which had been objected to by Mr. Bryant for covering the protruded intestine, was perfectly harmless, if antiseptic. The peritoneum tolerated larger and harder foreign bodies than the hairs from flannels, provided that they were antiseptic.

Dr. A. P. STEWART wished to call attention to the importance of substituting belladonna for opium in the treatment of such cases.

Dr. CAYLEY, in replying, said that he was responsible for the delay in operating, but he could not allow that the symptoms were too urgent for this delay. Just before the operation the man had been reading the newspaper.

Mr. LAWSON added that he had no alternative but to puncture the intestine, otherwise the small gut could not have been replaced. Dr. Buzzard, he thought, had not noticed that the fecal vomiting which had existed for twenty-four hours before the operation, had ceased after it, and the patient uninterruptedly got well.

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*On the Treatment of Dropsy of the Gall-bladder by Operation, with
Notes of a Successful Case.*

Mr. GEORGE BROWN records (*British Medical Journal*, Dec. 21, 1878) the following remarkable case:—

Mrs. C., aged 45, a tall, thin woman with very sallow complexion, consulted me, at the end of March, 1877, on account of an abdominal tumour. I obtained from her the following history:—

She was the mother of six children, all alive; the youngest seven years old. She had enjoyed very good health during the time of child-bearing; but, for about the last six years, had suffered from indigestion, pains of stomach, constipation, and occasional attacks of bilious colic. The catamenia was still regular. Her present illness dated from early in February, 1877, when one day, after cleaning windows, she had felt pain in her right side below the liver. She took no particular notice of the pain at the time, concluding that she had strained the muscles in overreaching whilst cleaning the windows; but, on going to bed, she rubbed her side, with a view to relieve the pain, when she felt a hard lump. Next day, she called in a local practitioner, who told her she had a tumour of the side, which diagnosis was confirmed by his partner, who added that nothing could be done for it by way of treatment except to endeavour to relieve pain. As she could obtain no information from these gentlemen beyond the assurance that she suffered from "tumour," she went to one of the metropolitan hospitals specially devoted to the treatment of diseases of women. The physician in attendance diagnosed "abdominal tumour," but would give no opinion as to its nature. He suggested, however, that he should attend her at home, where he would "puncture" the tumour to see if it contained fluid. She promised to consider the matter, but decided not to return to the hospital.

On examination, I found a tumour in the right hypochondriac region, extending from the lower border of the liver to about four inches below it. On percussion, its natural boundaries were found to be limited by two lines—one drawn from the right nipple to the spine of the pubes, and the second just half an inch to the right of the umbilicus. It was pyriform in shape; the narrow part of the tumour was directed towards the liver, and it could be grasped through the abdominal walls. To the touch, it gave one the impression of being fully as wide at its widest part as a medium-sized lemon. It was free from the abdominal wall, and could be moved from side to side. On asking the patient to take a respiration, it responded to the movements of the diaphragm, from which I concluded that it was attached to the liver, and I felt no doubt that the tumour was an enlarged gall-bladder. Whether the enlargement was due to fluid or gall-stones, I was unable to determine, as no fluctuation could be detected. As she was suffering from no constitutional disturbance, and felt equal to the management of her household affairs, I advised that nothing should be done for the present except to treat the constipation and biliousness. I kept her under observation for about nine months before any important alteration in her condition took place. During this time she had two or three attacks of bilious colic (with vomiting of bilious fluid), which were relieved by poultices, turpentine stupes, and opiates. Meantime, the tumour slowly but very steadily increased in size. On the night of the 31st of December last, she was suddenly seized with rigors and

extreme pain of the bowels. I saw her next morning, and ordered the usual remedies. She had a green liquid motion. There was great tenderness over the tumour, which at this time measured about five inches in length and four inches and a half in width. Its right boundary was now an inch and a half outside the umbilicus. The further progress of the case will be seen from the following notes taken daily :—

Jan. 2, 1878. Vomiting commenced early this morning. The liquid vomited was of a grass-green colour. There had been no sleep during the night; the pain was continuous. No action of bowels had taken place. Temperature 100.2; pulse 120. She was ordered ten grains of calomel in powder; and to suck ice, whilst hot linseed poultices were to be applied over the right hypochondriac region.

3d. She had passed a restless night. Pain was continuous. There had been no action of the bowels. She had vomited five times since yesterday morning, bringing up at each time about half a pint of greenish liquid. No food had been retained by the stomach. Ten grains of calomel and one of opium were given, and an enema four hours afterwards, but without any action of the bowels resulting. The enema was repeated at bedtime; again without result. The temperature and pulse were unaltered.

4th. There had been a better night; pain was less; she had vomited several times last night and to-day. She had taken two saline aperient draughts at four hours' interval; but, as no action of the bowels had followed, three castor-oil enemata had been administered in quick succession. After the last enema, two copious evacuations had appeared; the stools were of a very dark colour. They were examined for gall-stones, but none were found. Pulse 104.

5th. The bowels had acted three times since yesterday; the stools were liquid and pale coloured. The pain was less violent. Vomiting had ceased, but retching continued. There was extreme tenderness on pressure over the right hypochondriac region, and slight fluctuation could be detected over an area about the size of a shilling, an inch above and an inch and a half to the right of the umbilicus. Temperature normal; pulse 104.

6th. There had been a better night. Pain and sickness had ceased.

7th. The general condition was unaltered. Fluctuation was more manifest.

8th. She had had a good night. The bowels had acted three times since yesterday. No gall-stones were observed. There had been no vomiting, but she felt sick. There was less pain and tenderness of the tumour. A curious symptom to-day was almost constant and uncontrollable yawning. Temperature 100 deg.; pulse 104. Poultices had been constantly applied ever since the onset of acute pain.

9th. My friends Dr. Weston, Mr. F. H. Hume, and Mr. Gardner now saw the patient with me, and were unanimously agreed as to the presence of an abscess, probably in connection with the liver, and as to the desirability of aspirating. Accordingly, assisted by the two former gentlemen, I aspirated whilst the patient was under chloroform, and drew off six ounces of yellow non-fetid pus, slightly tinged with blood. I was rather disappointed at the smallness of the quantity of pus drawn off; but, after passing the trocar in all directions around the point of puncture to the extent of quite three inches, we concluded that the abscess was exhausted. On examination after the operation, we found that the tumour was unaltered in size. On passing a probe into the abscess-cavity, one could feel some hard nodular masses, apparently about the size of a filbert. At the time I thought that these nodules were encysted gall-stones, but this idea was afterwards disproved. Three hours after the operation she had slight rigors, the temperature rose to 102 deg., and the pulse to 130. Brandy, milk, ice, and morphia

were given, and next day the pulse fell to 96 and the temperature to 99 deg. During the night, she vomited twice about a pint and a half of green liquid. She had a liquid stool in the morning, apparently consisting chiefly of mucus and bile. No blood nor pus was observed with the stool.

For the next five or six days the patient remained in about the same condition. Pulse about 90 or 96; temperature normal. She continued exceedingly weak, being unable to take any solid food, and only small quantities of liquid nourishment, on account of the great tendency to vomiting. The bowels were kept gently open by means of aperients and enemata. The stools were invariably coloured with bile. On the 17th, the aspiration-puncture, which had apparently healed, reopened, and discharged a little blood-stained pus. On the 18th the wound discharged about half an ounce of pus. On passing a probe into the wound about two inches, nothing could be felt but the hard nodules before mentioned.

On the 21st she had another severe attack of pain in the right hypochondriac region, with nausea, sleeplessness, and inability to take food. As there seemed to be no hope of any amelioration in the condition of the patient unless something were done surgically for the tumour, I again consulted with Dr. Weston, Mr. Hume, and Mr. Gardner. There could be no doubt as to the presence of a tumour of a large size; and, after a careful consideration of the case in all its bearings, we agreed that we were justified in cutting through the abdominal wall, and, if the tumour were found to be the gall-bladder, in evacuating its contents and establishing a fistulous opening. If adhesions had been formed, I intended to stitch the walls of the gall-bladder to those of the abdomen. In proposing this operation I felt that, assuming the diagnosis to be correct, we were only anticipating the best results of which nature was capable. Every day increased the danger of a fatal termination, from the tumour rupturing and discharging its contents into the abdominal cavity. Several cases of this kind have been recorded. The patient and her husband having given their consent, we decided to perform the operation without further delay.

The patient having been placed under chloroform by Dr. Weston, assisted by Mr. Hume, I cut through the abdominal wall very carefully, commencing the incision at the aspiration puncture-wound, and carrying it downwards and towards the median line for about two inches and a half. After the first incision, I cut on a director until the peritoneum was reached. Several vessels were divided which required torsion; and the deep epigastric artery, which was cut through, required ligature. Instead of coming down on the gall-bladder, as expected, I found that I had opened the peritoneal cavity. On passing my forefinger into the wound to explore the abdomen, it was evident that the mass of the tumour was to the left of the umbilicus and middle line, and that the dulness and enlargement at the point selected for incision were due to inflammatory thickening and adhesions of the omentum. Whilst exploring the cavity of the abdomen, I could distinctly feel and recognize the lobules on the under surface of the liver, also the bodies of the vertebrae. I then made an incision at right angles to the first for about an inch, cutting towards the median line a little below the umbilicus, hoping to reach the gall-bladder, but without success. Mr. Hume now explored the abdominal cavity, and expressed the opinion that to attempt to reach the tumour by carrying the incision to the left of the umbilicus, and cutting through the mass of adhesions, would be attended with great risk; and as there was, as far as we knew, no precedent for the operation in which we were engaged, he advised that we should be content with what had been done; Dr. Weston also concurred. Moreover, the patient had been under chloroform upwards of an hour, during which two ounces of the anæsthetic were used; and, as she was in a weak condition when placed on the operating-table, we were almost afraid to prolong the

anæsthetic state for any further length of time. I must confess that I was reluctant to abandon the operation, but I felt it was only judicious to do so; and, if the patient recovered, I hoped to have the opportunity of performing a more satisfactory operation. Before closing up the wound, however, I made another exploration with my fingers, and tore through the adhesions towards the left as far as my fingers could reach. This procedure was, I believe, the means of saving our patient, and, as the sequel will show, rendered any further operation unnecessary. The edges of the wound were brought together with three silk sutures, and covered with a piece of lint dipped in carbolized oil. When she regained consciousness she complained of great pain in the right side. Four hours after the operation her temperature was 99.8 and pulse 88. There had been some bleeding from the wound, which, she believed, was due to the straining caused by a troublesome cough. I ordered a draught containing two grains of morphia, which, however, only gave her one hour's sleep. In the night she was seized with violent retching and vomiting of bilious fluid. After the retching commenced she found that her night-dress was saturated with a yellowish fluid, which proceeded from the wound. When I saw her in the morning the lint and bandages with which I had dressed the wound, as also her night-dress and the bed-linen around the spot where she lay, were saturated with the discharge from her side. Its colour left no doubt as to its origin. The quantity discharged could not have been less than a pint; but it is impossible to state the exact quantity. On removing the dressings, I found a steady flow of yellowish fluid making its exit from the angle of the wound. I collected about two drachms by means of a teaspoon in less than ten minutes. The liquid gave the ordinary reaction of bile. The bilious liquid continued to discharge throughout the 23d, 24th, and 25th; but, on the 26th, the discharge became pus-like and fetid.

To go through the daily notes of the case up to the date of her convalescence would take too much time. It must suffice here to state that she made an excellent recovery from the operation, almost without a bad symptom. The temperature never rose but just a fraction of a degree above normal, and the pulse kept at about 80 or 90. At no time was there the slightest symptom of peritonitis. Constipation continued, and was overcome by podophyllin, saline aperients, and enemata. For some time there was a good deal of gastric irritation, with occasional attacks of vomiting of bilious liquid, which were always relieved by effervescing draughts with morphia. Coincidentally with the discharge of bilious liquid the tumour decreased in size, until almost all trace of it had disappeared. When I examined her on February 8th, the abdomen was normally resonant everywhere, except over a limited area just around the site of the incision. The wound had healed by this time, except at the angle, and this would have healed probably, but I thought it advisable to keep it open for a time by means of tents. She sat up on February 2d, eleven days after the operation, after which she gained strength rapidly, and lost the cachectic appearance which previously existed. On February 21st, just a month after the operation, she walked out, and continued to do so daily until March 1st. On March 2d she had another attack of bilious vomiting, with pain in the right hypochondrium, which was increased on pressure. Temperature rose to 101.6 and pulse to 108. A few days after there were signs of the tumour reforming. On the 8th a small abscess burst at the inner termination of the cicatrix, discharging about a tablespoonful of pus. The discharge continued small in quantity and pus-like for some days, when it became clear and glairy. Thinking the discharge proceeded from a cyst in, or adherent to, the abdominal wall, I passed a seton through the fistulous opening and brought it out one inch to the left. The seton was drawn tighter daily, and cut through the tissues included in ten days. The fistula continued to dis-

charge a small quantity of clear fluid, in appearance closely resembling glycerine, until the middle of May; but, by the end of that month, the fistula had quite healed. Since May her general health has been excellent. She discharges her household duties as usual, and says that she never felt better than she does at present.

So much for the chief facts of this almost, if not quite, unique case. And now a few words as to its nature. Judging from the results of *post-mortem* examinations of patients who have died after illnesses accompanied with similar symptoms and physical signs, I think there can be little doubt that the primary lesion was the impaction of a gall-stone in the cystic duct, probably an angular one, which permitted the passage of a small quantity of bile into the gall-bladder. When this occurs we know that the gall-bladder becomes distended with bile and mucous secretion, in some cases giving rise to tumours of enormous size. After a time inflammation was set up, either in the tumour or in the tissues around its neck, terminating in a pericyclic abscess, which abscess I aspirated on January 9th. The tumour, however, was unaffected by this operation, and, had not something further been done, the probability is that it would have continued to enlarge (as has occurred in some cases), ultimately rupturing the walls of the gall-bladder. If the contents had been discharged into the peritoneal cavity the result must have been fatal.

This case, taken together with Dr. M. Sims's (*vide British Medical Journal*, June 8th), proves that, instead of such operations being unjustifiable, they can be performed with great hope of success. The time will probably come when, in such cases, the surgeon or physician will be held not to have done all that he should have done if he do not give his patient the chance of cure or relief which attach to operative measures; and, as Dr. Sims truly remarks, an operation should not be delayed until the patient is in *extremis*. If the patient is to have a fair chance of recovery we must operate early and before the vital powers have been so reduced as to be unable to withstand the shock. In this case the patient, although very ill when we operated, was very far from being in a dying state.

Extraction of a Prostatic Calculus.

This communication was made by DESPRÉS to the *Société de Chirurgie*, October 16th. The patient was a man aged 50, who, following gonorrhœa, had stricture complicated with two urinary fistulæ. After various kinds of treatment (progressive dilatation, cauterization with caustic paste) without benefit, had been tried, the case came into M. Després's hands. A No. 7 sound having been passed, the existence of a calculus, judged to be in the region of the prostate, was revealed. A rectal examination confirmed this diagnosis. M. Després did not wish to perform urethrotomy, as he considers this an operation which renders this stricture more fibrous and resisting; but as no sound above No. 7 could be made to enter the bladder, an operation was resolved upon. A prerectal incision was made; at the bottom of the wound a fibrous cord was perceived, the nature of which could not be determined. The sound introduced into the canal not having been seen, the operator decided to incise this cord. It proved to be in the urethra, and the sound was now found; dilatation having been practised, a calculus was extracted, upon which was impressed all the eminences and depressions of the prostatic region. A No. 7 sound was now introduced into the bladder, commencing at the meatus. In twenty days it was withdrawn, and a No. 14 then readily passed. On the fifty-first day the patient left for the country, only a small fistula remaining, from which a little urine escaped.

The calculus was of the size of a chestnut, weighing 8 grammes 20 centi-

grammes (about 130 grains); it was composed of two very hard central nuclei, surrounded by concentric layers of ammoniaco-magnesium phosphate.—*London Med. Record*, Jan. 15, 1879.

Arterial Denudation.

In a clinical lecture delivered at La Pitié (*Gaz. des Hop.*, November 14), Professor VERNEUIL made the following observations:—

It often happens that a surgeon lays bare arteries of a considerable calibre during the course of an important operation such as the extirpation of a tumour, etc. In fact, arteries are often surrounded by these neoplasms; and you must have all seen wounds of this kind, in which the vessels, isolated and dissected with care, lie naked at the bottom of the wound. The prognosis of such denudations varies greatly. Some persons having seen the wounds close over the vessels without the slightest ill result, have come to the conclusion that there is no danger in dissecting out vessels during an operation; and this opinion seemed all the more rational as every one is aware how long the vessels offer resistance to accidents, remaining intact in the midst of purulent collections, and not undergoing perforation even when abscesses form within their sheaths. But opposed to this optimist opinion there is to be placed another, far less reassuring. For surgeons also meet with formidable hemorrhages in wounds in which arteries have been thus denuded, and that in cases in which they have not only respected the external coat of the vessel, but even the cellular tissue covering it. Which of us is there also who has not seen hemorrhages supervening in the midst of purulent collections traversed by vessels? What is the cause of these so considerable differences in the consequences of the same fact? The clinical facts I am about to notice will, I think, clearly indicate the cause of both successes and reverses.

I was consulted by a robust man of large stature, and endowed with an uncommon amount of energy and activity. He had had for several years a tumour in the parotidean region, but, immersed in his affairs, he paid little attention to its progressive growth. But for a year it had increased considerably, the skin covering it also changing in colour; and he came to consult me in December, 1877. At that time the tumour extended from the middle part of the temporal region to about two centimetres below the lower edge of the jaw, reaching in front the supra-hyoidean region. It projected five or six centimetres. The skin was adherent to the tumour, and very vascular; and the tumour was movable from before backwards. Nothing could be felt of it on passing the finger into the pharynx. It was quite painless, and there was neither paralysis of the facial, obstruction in the cerebral circulation, vertigo, nor congestion, indicative of arterial compression. While recognizing the seriousness of the prognosis, I felt disposed to remove the tumour; and having consulted Professor Richet, he diagnosed softened enchondroma, and also advised an operation, although somewhat doubtful as to the issue. The patient being very desirous that it should be performed, it was executed on January 10. But while considering the propriety of the operation, I had been rendered somewhat uneasy by an unpleasant circumstance that came to light. Although the patient had all the appearances of robust health, he mentioned to me, without attaching the slightest importance to it, and almost as a joke, that he had recently consulted a "urine doctor," who had declared him to be diabetic. The doctor prescribed for his patient, especially employing the iodide of potassium, and in five or six weeks afterwards declared that sugar no longer appeared in the urine. His rapid cure inspired me with some distrust, and I insisted upon an analysis of the urine being made. This proved completely negative, and confirmed me in the opinion which I had given. The operation was a laborious one, but I need only refer to the principal details.

The tumour was circumscribed by superficial incisions made by the thermo-cautery, and the deeper incisions, or rather enucleations, were executed by the fingers. The whole of the carotidean vessels were laid bare, their pulsations being visible at the bottom of the wound, the vessels being, however, covered by a moderately thick layer of conjunctive tissue. The jugular vein was also exposed to a large extent. No vessel of any importance was injured, ligatures only being required for the temporal and for a branch of the internal maxillary. The whole of the parotid was removed, as well as a large portion of the sterno-cleidomastoideus. The amount of blood lost was pretty considerable, but the patient bore the loss perfectly well, and forty-eight hours afterwards seemed only as if he had undergone a slight operation. He complained only of dysphagia and great salivation, as is always the case in operations upon this region.

The next day, on his urine being examined, it was found to contain sugar. It is a fact of frequent occurrence for an operation to arouse glycosuria in intermittent diabetes. I was therefore not surprised, but my former apprehensions returned, and were corroborated by another pretty significant phenomenon. During the operation, the primary hemorrhage which follows the section of the tissues was much more prolonged than it is observed to be in healthy subjects. This sanguineous issue continued for some hours, while there was none of the venous hemorrhage so frequently seen after the patients have come to and made some efforts. On the second day the urine was turbid and reddish; there was no longer any sugar in it, but the urates existed in a colossal proportion, uratic diabetes having become substituted for glycosic. On the fifth day erysipelas appeared, which, springing from the edges of the wound, spread all over the head. This had disappeared by the ninth day. From the fifth day daily attacks of hemorrhage occurred, and the patient, losing his early calmness, became very restless. These were temporarily arrested by the application of pieces of agaric, until the fourteenth day, when the bleeding became so serious that all the agaric was removed. As the last piece of this was taken off, a jet of blood sprang from a small perforation in the carotid. The bleeding was arrested by the application of hæmostatic forceps; but after some hours the patient succumbed. During all the progress of the case the wound was never of its proper rose-colour; it was red, and differently coloured at different points, some being of a vermilion red, and others of an aponeurotic whiteness. This is always a bad sign. About the eighth day a wound ought to be uniformly rose-coloured over its whole extent.

In other cases I have been more fortunate. In order to remove a tumour of the arm-pit, the size of the head of a full-time infant, I denuded the axillary artery to the extent of three inches; on removing the parotid I have even denuded the carotid; and in extirpating a tumour of the neck I have exposed all the carotidean branches without any ill-effect. Last year, while removing a fibroplastic tumour of the thigh, I dissected out the femoral vessels to a length of fifteen centimetres. All these cases terminated successfully. I had a fatal termination after dissecting a lymphadenoma from Scarpa's triangle, when a rupture of the femoral occurred. At the autopsy the artery was found to have been rendered friable by the infiltration of the disease. I may also mention a remarkable case published by M. Nepveu in which the carotid was denuded during the extirpation of an enormous tumour of the neck. Fever supervened, and a formidable hemorrhage occurred from an eschar which had formed in the carotid. In this case the affection had also become generalized. In this point of view, also, we must remember that children the subjects of old abscesses of the neck have often succumbed to sudden hemorrhages which have supervened at periods of complication, as scarlet fever, etc.

In the three patients who succumbed, hemorrhage supervened when the econ-

omy was in an enfeebled state, when the general condition was a bad one, and fever with septicæmia had set in. From these facts I believe that I may conclude that sphacelus and perforation of arteries do not take place except under unfavourable conditions; and this is how I explain the mechanism. In wounds practised on healthy persons there remains in the conjunctive tissue which covers the external coat of the artery a small layer of cellular nuclei, which by proliferation form a granular surface and granulations that give sufficient protection to the arterial walls. But in debilitated organisms this granular layer does not suffice for reparation, and becomes sphacelated, thereby exposing the arterial wall, which becomes thus dissected out. The conjunctive tissue of the wall may even form granulations, and constitute a new granular layer; but this conjunctive tissue, in the course of proliferation, is substituted for the resisting tissue of the arterial wall. The same thing takes place here as occurs in wounds of bones. At a given moment an insensible exfoliation takes place—a loss of substance which is only filled up by granulations. The arterial wall then becomes enfeebled; and if we add to this unfavourable condition that, in a wound which goes on badly, considerable atrophy rapidly supervenes, we can easily understand the production of sphacelus of the wall of the artery.

It is, then, in my opinion, under the influence of general accidents that these arterial ulcerations are produced. It is to the constitutional condition that we should attribute them; and when a morbid diathesis exists the surgeon should expect unfavourable events.—*Med. Times and Gaz.*, Jan. 25, 1879.

Fatty Embolon in Fractures.

M. DÉJÉRINE contributes to the *Le Progrès Médical* a paper on this subject, from which the following extract is made:—

In 1862, Zenker, making an autopsy on the body of a man that had been crushed between two wagons, found the capillaries of the lungs filled with fat. He believed that this fat might have come from the stomach, or from the liver, which was in a state of fatty degeneration, for both these organs had been injured. Zenker considered this fact very interesting from an anatomical point of view, but he did not know the relation which existed between fatty embolon and traumatism, so did not record as of great practical importance the case which he had observed. In the same year, Wagner published many cases of fatty embolon, but he regarded the fat as originating in a metamorphosis of pus, and as one of the causes of pyæmia. It was not until 1865 that Wagner and Busch recognized in osseous alterations the nature and causes of fatty embolon, each giving an exact and complete description, nearly at the same time; from that date the doctrine of fatty embolon has rested upon an unattackable basis, and pathological, clinical, and experimental works have rapidly followed one another. It was proved in every fracture that there was a fatty embolon, having its origin in the medulla of the bones, that this embolon was more or less considerable, that it was rarely localized in the lung, but it was met with in every tissue of the organism. Then it was shown that in a certain number of cases the diagnosis could be made during life, and that it should be regarded as a frequent cause of death; it was pointed out that by this mechanism a fatal termination was brought about in a number of those cases of more or less sudden death observed after severe injuries, and up to this date attributed, in a general way, to what is designated in practical surgery by the name of shock. With regard to this it is sufficient to mention the works of Bergmann, Bzerney, Halm, and Flourney.

From the researches of the different authors enumerated, it follows that fatty embolon, general or localized in the lung, is much more common than is frequently supposed, and that it is produced not only in all fractures, simple or com-

plicated, but it may be observed, without reference to injury, in all cases where the bones are altered in structure from some cause or other; in such the fact is less grave. The number of cases of fatty embolon observed under circumstances about to be mentioned, are actually considerable, reaching 140, and all, or nearly all, have been observed in Germany, but two such observations were noted in the ancient faculty of Strasburg. Having lately met with two very clear cases of pulmonary fatty embolon, following osseous alterations, we publish them to draw attention to a subject little known to us, still less studied, but the importance of which should not be lost sight of in reference to published statistics; a doubly important subject for consideration, not only because it enlarges the scope of pathological knowledge, but more especially because it makes us recognize a very fatal complication of great injuries, and which, therefore, has considerable clinical importance from a prognostic point of view. On the 28th of October last, a young man, aged 16, was admitted into the Hôtel Dieu, in the service of Dr. Cusco, who had had his right leg crushed by a tramway. A certain quantity of blood was lost, and the patient sank about an hour after admission, being sensible to the end. The autopsy was made by the interne, M. Bruchet, and a fracture of both bones of the leg at the middle third was found, and also a fissure of the tibia reaching the upper articulation. He very kindly sent me the lungs and the heart. The vena cava had been previously ligatured to permit of an examination of the blood in the right ventricle. The microscopical examination was made in the laboratory of Prof. Vulpian, and revealed the following particulars: The blood of the right ventricle, obtained by making a puncture into the ventricular wall previously washed with ether, contained a large quantity of fat in the form of drops, and recognizable by its micro-chemical characters, disappearing under the action of ether, and taking on a black coloration under the influence of osmic acid. The vessels of the lungs were gorged and literally injected with fat; sections of the parenchymatous tissue of the lung cut with scissors and examined with the microscope, showed in the interior of the vessels, arterioles, veins, and capillaries, elongated masses, three, four, and five millimetres in length, embellished with a special refulgency, disappearing under the action of ether, and becoming a deep black colour with osmic acid. These globules of fat were so abundant at certain points that they designated not only the perilobular vascular network, but also the alveolar capillary network. An examination practised at all points of the two lungs gave us the same results. The second case, not less instructive than the first, came from the service of Dr. Brouardel at St. Antoine. The lungs, which we have examined in conjunction with M. Mayor, were sent by M. Marchland, interne of the service. They were taken from a man who had died thirty-six hours after a fracture of the right parietal bone, and, as in the preceding case, the pulmonary vessels contained more or less fat. In both cases no other viscera than the lungs were examined for fatty embolon. The two cases which we here report are absolute examples demonstrating fatty embolon after injury to bones; in this note we do not wish to inquire the part the fatty embolon took in causing death in these two cases. In the first we see but little that could be put down to any other cause; this is a subject which we propose to study more completely in the future, for cases of fatty embolon are in reality far from being rare, and we are persuaded will daily become more frequent when researches are undertaken in those who have succumbed from injuries. The two cases here reported resemble on all points those which have been made public in Germany of late years, and are confirmations of the published facts of different authors who have inquired into the question; but, as was said previously, we have believed it right to publish them, to draw attention to a subject worthy of study from every point of view, for, well as the doctrine of fatty embolon has been expounded in

the faculty's course by Prof. Vulpian and Charcot, it does not seem up to the present time to have attracted the attention of the medical world.—*London Med. Record*, Jan. 15, 1879.

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Arthrotomy for the Extraction of Foreign Bodies.

At the *Société de Chirurgie* (Nov. 6th, 1878), M. VERNEUIL brought forward the following case. A man, aged 31, strong and well built, but with a rheumatic history, noticed in December, 1877, a pain in the right knee; this increased in severity, and in the month of May, 1878, he found a foreign body at the side of the joint, which could be fixed by certain manœuvres. He sought advice and two foreign bodies were then found; one, the larger, situated at a point internal and above the patella, was very movable and easily detected; the other one, unless fixed by the patient, was not easily caught, and sometimes disappeared for many days. M. Verneuil decided to effect removal by opening the articulation. The patient was anæsthetised, but just as the incision was about to be made the last foreign body escaped; the operation was therefore postponed. At the next attempt the substance was first fixed by acupuncture needles, and a section made of the skin and tissues upon the body; a hard white tissue was first reached and thought to be the new formation; this tissue, however, being incised, the foreign body escaped from it. Similar steps were taken on the outer side of the joint, and extraction effected; here the synovial membrane was found to be thickened. During the operation a carbolic acid spray was kept playing upon the wound, and this was afterwards washed with a strong solution of the same antiseptic agent. The lips of the wound were not approximated, but a piece of linen steeped in carbolic acid interposed, and a wadding dressing applied. The external wound healed in twenty days, the internal one a little later. When the patient left the hospital there was slight stiffness of the joint. The foreign body resembled pieces of the white soap which tailors use for correcting defects, and were composed of cartilaginous tissue.

M. LUCAS-CHAMPIONNIÈRE thought that this interesting case added another to the antiseptic arthrotomies published by Saxtorph, Lister, Bæckel, and other surgeons. The results of Lister's method were better than those obtained by the wadding treatment of Guérin. He had extracted a very large foreign body from the knee-joint by this plan; the substance was so placed that it was necessary to open the popliteal space. The articulation was exposed and drained, the wound then sutured. At the third dressing, on the eighth day, cicatrization was perfect, and at the termination of the third week the patient left the hospital with natural movements of the joint. He had also operated upon a patient of M. Tarnier's with puerperal arthritis of the knee. The fever was intense, the pain intolerable, the woman for many nights keeping her neighbours awake by her cries. The articulation was opened antiseptically and carefully drained. Pain ceased immediately the fever subsided; healing was obtained with preservation of the normal movements.

M. GILETTE is a strong advocate of the wadding plan. At the *Hôpital Temporaire* he had extracted a foreign body from the knee-joint of a man, aged 28, with hydrarthrosis. Immediately after the operation wadding was applied to the wound, and all precautions taken to prevent the entrance of air. At the end of forty days, when the dressing was raised, the cicatrix was perfect.

M. DEPRES considered that foreign bodies in joints necessitating an operation by their presence were rare. He had often discouraged the idea of an operation in such cases. Arthrotomy was not always fatal; he did not think it a very grave operation, and cited numerous instances of penetrating wounds of joints that had terminated favourably.

M. TRELAT was of opinion that statistics would prove if the operation of arthrothomy was justifiable. If the mortality did not exceed more than three or four per cent., it was a decided gain.—*London Med. Record*, Jan. 15, 1879.

Midwifery and Gynæcology.

Abdominal Palpation and Version by External Manipulation.

The object of Dr. A. PINARD's work (Paris, 1878) is to demonstrate the possibility of diagnosing mal-presentations by palpation during the last weeks of pregnancy, and of rectifying them by external version. Having reduced the presentation to a normal one he applies an abdominal belt to keep the fœtus fixed in the new position until labour sets in. He thus avoids breech and shoulder presentations and secures head presentations. It is obvious that this proceeding marks a progress in obstetric medicine. Abdominal palpation has hitherto been greatly neglected, but in future it can no longer be so. Professor Tarnier lately said, at the Society of Medicine: "In a short time physicians and midwives will be compelled, under pain of neglecting their duty, to assure themselves, during the last month of pregnancy, whether the presentation is normal or not. On their side, the patients will soon find out that there is a simple means of avoiding serious risks. They will naturally come to avail themselves of it. These ideas will quickly spread, and among the lower classes, the poor women will acquire the habit of going during the last month to the lying-in hospitals to find out if their children are in proper position. This will be a great progress, because, in this way, a large number of obstetrical operations will thus be avoided." When visiting the clinique d'accouchements at Paris, the reporter had an opportunity of seeing Dr. Pinard reduce an arm presentation by external version, apply his binder, and thus secure a head presentation. The binder or entocic belt, as it may well be called, is described and figured in the *British Medical Journal* for Dec. 7, 1878.

The Treatment of Chronic Metritis.

Dr. A. MARTIN of Berlin (*Berl. Klin. Wochenschrift*, No. 42, 1878) recommends the removal of the cervix uteri in those numerous cases of chronic metritis which resist all other medicinal and local treatment. By "chronic metritis" he understands a connective-tissue overgrowth of a part or the whole of the uterus and cervix, the result of flexions, abnormal menstruation, etc., and especially of incomplete involution of the puerperal organ. "What we must remember," he says, "in treating chronic metritis is that we have to do with changes of wide extent in the tissues of the whole uterus, while at the same time its mucous membrane has, as a rule, undergone alterations of a severe and not always benign character." The rationale of amputation of the cervix appears to be, that a fatty metamorphosis of the hypertrophied connective tissue, analogous to that which occurs in puerperal involution, is produced. At any rate, Dr. Martin has not only theory, but practice in his favour. He has performed the operation seventy-two times in cases of chronic metritis. Half of these cases had been long treated by the ordinary methods without benefit. All of them exhibited changes of the mucous membrane, and greater or less enlargement of the uterus both in length and thickness. In most of them the cervix (and especially the lips) was much hypertrophied. The symptoms were usually profuse secretion, irregular and

abnormal menstruation, severe hypogastric and pelvic pains, digestive disturbances, and hysteria. About four or five centimetres of the cervix were removed in each case, and on recovery from the operation it was generally found that the uterus was reduced in length another one or two centimetres. At the same time, as a rule, the thickness of the uterine wall diminished, and eventually the consistence of the uterus became normal, while nearly all objective, and many subjective, symptoms disappeared. In three cases sterility of long standing was cured, it being remembered that nearly all the operations have been performed within the last two years. The details of the operation, and the method of arranging the sutures so as to cover the newly formed cervical lips with vaginal mucous membrane, must be read in the original. Here we can only say that the knife is used instead of the *écraseur* or galvanic cautery; and that the form of excision known in Germany as "*Hegar's funnel-shaped excision*" is the most appropriate. Difficulties in the operation are seldom met with, and with a uterus of ordinary mobility ten to fifteen minutes suffice for completing it. The main thing to keep in mind is, that the larger the amount of cervix excised, the greater the subsequent involution of connective tissue is likely to be.—*Med. Times and Gaz.*, Jan. 25, 1879.

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On the Value of Subcutaneous Injections of Ergotin in Uterine Fibroids and Chronic Hypertrophy of the Uterus.

This is the subject of a valuable contribution by LEOPOLD, in the *Archiv für Gynäkologie*, Bd. xiii. s. 182. Leopold supports Hildebrandt, Winkel, Wernich, etc., as against the late Professor Martin, of Berlin, and others, maintaining that ergot so employed is of great value in the treatment of uterine fibroids. But he further has employed the same agent with considerable success in the treatment of subinvolution of the uterus and of chronic metritis. It is maintained by him that success depends largely upon the mode of performance and the continuation of the treatment, the selection of the cases, and especially the selection of the preparations. Failure, Leopold holds, has followed from neglecting these considerations. According to our author: The form of fibroid that gives best results is the interstitial, although advantage may be expected in the way of lessening hemorrhage, and promoting ultimate expulsion of the tumours in submucous fibroids. Cases are unsuitable in which the uterus is incapable of contracting; therefore there is no use of employing the injections when there is any false membrane or exudation binding down the uterus, or when it contains a fatty degenerated or calcareous tumour, when its muscular fibres are atrophic, or its bloodvessels degenerated. Tumours in the body of the uterus are more benefited by the treatment than those in the neck. Great care is to be employed also in selecting for treatment cases of subinvolution or chronic metritis. Every case in which there exists pelvic exudation is to be rigidly excluded, also if there is a polypus in the uterine cavity. The best preparation Leopold finds to be Wernich's extract dissolved in four parts of distilled water. After trial he has found that the addition of glycerine, salicylic acid, carbolic acid, or morphia is objectionable. He recommends that the solution should be very frequently renewed, as it is apt to get mouldy. The best situation for injection, according to Leopold, is by the side of the navel, the canula being inserted deeply into the abdominal wall. The injections ought to be made very slowly, and a cold compress ought to be immediately applied to the part, whilst the patient ought to keep lying on her back for several hours afterwards. The injections ought to be continued for a considerable time—30–120 in each case—if they are well borne. They should be made almost uninterruptedly each day, especially and intentionally during the menstrual flow. With diminution of the bleeding the periods between the injections

may be lengthened. Leopold records 12 cases, in which he had employed the ergotin injection. There was no improvement in 3 of these = 25 per cent. There was essentially less bleeding without appreciable diminution of the tumours in 5 = 42 per cent. There was notably shrinking of the tumours in 4 = 33 per cent. So that he concludes that 75 per cent. gave evidence of improvement. Our author also gives the results obtained in 14 cases of chronic hypertrophy of the uterus, 8 of which he classes as examples of subinvolution, 5 as examples of chronic inflammation or metritis, and 1 as exfoliative endometritis (dysmenorrhœa membranacea). In those 14 cases the chief effect noticed was sooner or later diminution of the sanguineous discharge at the periods; the time required for the treatment varied from one to six weeks in cases of subinvolution, to several months in cases of chronic metritis. If decided advantage did not occur in these cases after 50-60 injections, Leopold thinks that it is useless to continue longer injecting the ergotin, and other means must be tried. In the majority of Leopold's cases the ergotin injection was accompanied by an improvement in the patient's general condition, strength, and appetite. The particulars of the *sections* of the uteri of two patients who had been treated for fibroid tumour by this method, and who had died from disease in no way connected with the fibroid tumours, are then given. The examination of these tumours unmistakably prove, according to Leopold, that under the use of the ergot the tumours had been compressed, their vascular supply very largely cut off, the tumours themselves rendered anæmic, whilst fatty degeneration had commenced in their muscular elements.—*Edinburgh Med. Journ.*, Nov. 1878.

Removal of the Uterus by Freund's Method.

In this case the patient was 34 years old, and had had two children, the last ten years ago. The cancerous growth had invaded the body of the uterus, which was retroverted. On September 30, Dr. LEOPOLD performed the operation of total extirpation of the uterus by Freund's method, under complete antiseptic precautions. The operation lasted two hours and a half. At the beginning of the second day after the operation, the patient died. The details of the *post-mortem* examination are so interesting that we give a translation in full. "At the necropsy the abdominal wound was found already in process of union. The intestines in the pelvis were greatly injected (commencing peritonitis). At the bottom of the pelvic cavity there was a collection of about two or three table-spoonsful of sanguineo-serous fluid. After the entire pelvic organs had been carefully removed, the ligatures were found to have been well applied, and the bladder and ureters uninjured. A careful examination, however, of the posterior wall of the bladder revealed the presence of several fine off-shoots and streaks of cancerous growth, which had also been observed during the operation. The result of destroying this by the cautery would have been extremely unsafe. As regards the stitching of the peritoneum, the unsewing of it at the autopsy proved how defective it necessarily is, even when it appears to be well done during the operation. With regard to this point, we cannot follow too carefully the advice of Dr. Freund in reference to the closing up of the bottom of the wound and the stitching in of the Fallopian tubes. The condition of the ovaries was the most interesting part of the examination. During the operation the left ovary was felt to be small and atrophied, the right contained a fluctuating follicle about the size of a hazel-nut, which had recently burst and was filled with blood. (The operation was performed nine days after the commencement of the last period.) At the necropsy, the condition of the ovaries was remarkably changed. It was evident, that as a result of the great stagnation resulting from the ligatures, that

both ovaries had increased to three times their size on account of numerous blood effusions, and were lacerated internally. In the right ovary the blood effusion had ruptured the delicate wall of the follicle and poured out into the pelvic cavity. From nowhere else could the recent blood found in Douglas's pouch have come. Taking all the facts into consideration, there can be no doubt that the patient died from loss of blood and septic peritonitis." This case points to the importance of observing the rule to avoid surgical interference either just before or after the menstrual nixus.—*London Med. Record*, Jan. 15, 1879, from *Centralblatt für Gynäkologie*, Nov. 1878.

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A Case of Dermoid Cyst of the Ovary.

Dr. GOMES TORRES, of Granada, relates (*Annales de Gynécologie*, June, 1878) a case of dermoid cyst of the ovary successfully removed by ovariectomy after a fistulous opening had existed for nearly three years. The patient, Antonia C—, was twenty-five years old, and single. Menstruation commenced at the age of fifteen, and continued regular and perfectly normal up to the age of twenty. At that time she was frightened by a horse, and the fright brought on syncope, and suppression of menstruation, attended by nausea and general malaise, which lasted for a week. Menstruation reappeared four months later, after treatment by iron. Eight months after the fright, and four after the re-establishment of menstruation, she commenced to feel pricking pain in the left iliac fossa, and then observed for the first time a tumour in this situation, which was hard, tender, movable, and about the size of a hen's egg. Pain continued, and the volume of the tumour went on increasing till it reached the umbilicus, where it formed a marked prominence. The medical attendant in charge, ascertaining that fluctuation was present, made an incision, which allowed to escape a large quantity of thick liquid. The tumour then diminished, the orifice became fistulous, and there continued to flow from it pus and thick matter, the nature of which could not be determined from the patient's account.

This condition of things continued for nearly three years, with exacerbations of pain at the menstrual periods. Three months before the patient came under Dr. Torres's care, there appeared protruding through the fistulous opening a mass consisting of bone with teeth implanted in it, the shape of the bone and the situation of the teeth being such that it resembled a dog's head. When this became known in the village it gave rise to extraordinary reports, and the patient was led, on this account, to come to Granada for relief. She was admitted into the hospital on January 15th, 1872.

The general condition was then good. The abdomen in the median line was occupied by a tumour commencing 3 cms. below the umbilicus, and losing itself in the left iliac fossa. Measured transversely, its greatest diameter was 22 cms. At its upper part, and a little to the left, the abdominal wall was destroyed to such an extent as to allow a part of the tumour to form a hernia in the shape of an irregular cone, whose base measured about 7 cms. in diameter. At the truncated summit of the tumour were several teeth, which appeared to be canine, and which could not be detached. On one side, a little lower down, was a fleshy appendix resembling a thumb. The surface of the tumour felt hard and irregular, and on pressing it, watery pus of offensive odour poured forth. On vaginal and rectal touch, the uterus appeared to be movable, the cervix being directed backward and to the left.

Ovariectomy was performed on January 24th. The incision was made in the linea alba from the lower extremity of the ulcerated opening to a point three or four centimetres above the pubes. Much difficulty was found in separating the

adhesions uniting the front of the tumour to the abdominal walls, and it was necessary to use the knife to divide them. Hemorrhage was arrested by the actual cautery. It was then found possible to draw the tumour out of the abdomen, some unimportant adhesions being carefully separated. The solid portions of which it consisted however were prolonged as independent masses into the iliac fossa, and it was therefore impossible to obtain a pedicle sufficiently long to fix in the wound by means of a clamp. The base of the tumour was, therefore, divided by the actual cautery, and this proved sufficient to arrest hemorrhage. The wound was united by deep and superficial sutures, but it proved impossible to adapt accurately the edges of the ulcerated opening.

On the evening of the 25th, the pulse had risen to 110, temperature to 38.° Cent., and there was tympanites, vomiting, and subdelirium. During the next two days there was improvement; on renewing the dressings on the 27th, it was found that the lower part of the wound was looking well, but the upper part was secreting creamy pus in abundance. On the 28th the pus was less creamy, and had become offensive. Swelling and tenderness being found in the right iliac fossa, eighteen leeches were applied over it, after which the pain was relieved. Mercury and belladonna ointment was afterwards rubbed in every four hours over the same region.

On the 30th, to facilitate the escape of the discharge, one of the deep sutures was removed from the upper part of the wound, which did not seem inclined to unite by first intention. The same evening an intestinal hernia, larger than a turkey's egg, was found to have occurred at this point. A pad of charpie was employed to retain it within the abdominal cavity. On the 31st there was pain and tenderness in the left iliac fossa, and on vaginal touch a hard tumour was felt in the position of the left ovary, but no fluctuation could be detected. The upper part of the wound was now beginning to be covered by healthy granulation. On February 2d the general condition was improving, and the swelling in the left iliac fossa diminishing. On February 8th the opening at the upper part of the wound was diminishing, though the intestines still tended to protrude under the influence of a cough or any other effort. From this time convalescence was steady till the patient left the hospital on the sixty-third day. At this time the ulcerous wound was closed by a solid cicatrix, and all the functions were accomplished normally. On the latest report, it was stated that the patient had married on leaving the hospital, that she had two normal pregnancies, and was then pregnant for the third time.

The cyst removed had a thick wall, with a thin layer of osseous tissue on some parts of its internal surface. Its contents were a small quantity of pus, a gelatinous substance, skin with all its characters, hairs in great abundance, and of different lengths, very numerous teeth, some implanted in bones, some free in connective tissue, a large number of bones of various shapes, and cartilage, some of it in process of ossification. One of the bones resembled the temporal bone of a child of seven or eight years old, another resembled a parietal-bone, but was no larger than an adult's nail. Another bony mass resembled the coccyx with some of the sacral vertebræ.

The author considers it proved that dermoid cysts do not commence only in fetal or infantile life, but may arise after puberty. The case now reported he considers a confirmation of this view, since menstruation was perfectly normal, and no tumour discoverable for five years after the commencement of menstruation, while the appearance of the growth appeared to be the sequel of an interruption of menstruation from an external cause.—*Obstetrical Journal of Great Britain*, Jan., 1879.

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APRIL, 1879.

Anatomy and Physiology.

Action of Bile on the Glycogen of the Liver.

In a recent number of *Lo Sperimentale*, Dr. G. BUFALINI gives the results of some experiments made by him for the purpose of determining the action of bile on the hepatic glycogen. He says that there has been much controversy on the question whether the bile is capable of transforming starch into glucose. The experiments, however, of Wittich, Gianuzzi, and Bufalini himself, have answered this question in the affirmative. Wittich collected the bile in a case of fistula of the gall-bladder, and rapidly obtained through its use the transformation of starch into glucose. The special object of Dr. Bufalini's recent experiments has been to ascertain whether bile exercises any transforming influence on the hepatic glycogen. For this purpose, he has made a number of experiments, using the bile of various animals (oxen and cows), removed from the gall-bladder about two hours after death. The glycogen was prepared by Kühne's process; and both were tested for glucose by Trommer's test. Regarding the action of bile on the hepatic glycogen, he finds that bile removed from the gall-bladders of animals killed a short time previously, and placed in contact with glycogen at a temperature of 104 deg. Fahr., reduced it to the state of glucose in a longer or shorter time. Of 150 experiments, the time required for the change was, in 50 cases one hour, in 50 other cases two hours, and in the remaining experiments from two and a half to three hours. When bile is deprived of its mucus and colouring matter by means of animal charcoal, and slightly acidulated with acetic acid, it retains its property of transforming glycogen, but the time required is longer and the transformation is less complete. He explains this by saying that a portion of the ferment is carried away with the mucus. Another series of experiments made by Dr. Gianuzzi and himself have led him to the conclusion that bile in a state of putrefaction does not retain the property of transforming either starch or glycogen; no effect being produced at the end of twenty-four hours. He also found the transforming property destroyed in bile which was boiled, filtered, and cooled, and then mixed with glycogen at a temperature of 104 deg. Fahr. The biliary salts and acids also had no action on hepatic glycogen.—*British Med. Journal*, Feb. 22, 1879.

Materia Medica and Therapeutics.

The Action of Arsenic.

An important series of researches on the mechanism of the action of Arsenic has lately been undertaken by Professor BINZ, of Bonn, and H. SCHULZ, who

have described their results in the *Centralblatt für die Med. Wissenschaften* "How is it that arsenic is a poison?" was the question first investigated, and the results which are reached throw some light on its therapeutic influence.

If a solution of arsenious acid or of its neutral salt is injected beneath the skin of an animal, no trace of local caustic action results; but, unless the animal quickly dies by paralysis of the heart, the stomach and whole intestinal tracts are, after a few hours, intensely inflamed. A saturated solution (in the cold) of vitreous arsenious acid, or of sodic arsenite or arseniate, placed in the conjunctival sac of a guinea-pig, produces only slight local redness—hardly more than an equally strong solution of ordinary salt. Arsenic has no immediate affinity for albumen, and is, as Buchheim remarks, probably first transformed into a poisonous compound in the organism; but of the precise nature of this poisonous compound we are at present ignorant.

In experimental chemistry both the compounds of arsenic are available as oxygen-carriers. After reduction they are easily oxidized, and may be again employed as oxidizing agents. Both these processes may take place when the arsenious compounds are in contact with organic substances. If arsenic acid, or its weak alkaline salt, is digested with fresh albumen, fibrin, pancreas, etc., and even with vegetable protoplasm, dialysis always yields arsenious acid, and no decomposition occurs. Decomposing fibrin gives the same reaction. On the other hand, if arsenious acid, free or as its salt, is digested with pancreas or with the fresh leaves of *Lactuca sativa*, dialysis yields definite evidence of arsenic acid. Defibrinated arterial blood, as well as pure oxyhæmoglobin, on the other hand, leave the arsenious acid unchanged.

In six cases of slow subcutaneous poisoning, it was observed that the gastritis was most marked in the neighbourhood of the pancreas, and that it constantly proceeded from the posterior wall. This is corroborated by some observations in cases of poisoning in men, where the places at which the gastric irritation commenced could be traced. This localization has nothing to do with the local accumulation of the arsenic taken by the mouth, because in the experiments on animals in which the arsenic was introduced directly into the blood the same change was observed. Further investigation led Binz and Schulz to the following theory. The arsenious acid, which has an action on albumen, is certainly in part oxidized to arsenic acid, and this is, again, reduced. Protoplasm effects the oxidation, and in it also the reduction occurs most strongly. The unusual interchange of nascent oxygen within the molecules must tend to the formation of nitrous acid, and in part also to nitrous oxide, the latter being further transformed to nitric acid, and thus the protoplasm will be destroyed more quickly than the interchange of matter can renew it. The arsenic thus plays the part of the oxygen-bearer, and leads to a sort of molecular combustion. The interchange of the oxygen probably takes place most readily in the glandular organs of the intestinal tract, but may occur elsewhere, and probably does occur, especially in the nerve-centres, in which so energetic an interchange of material is always going on. Hence the irritation and quick paralysis of the nerve-centres. We are also able to understand, on this theory of its action, why there is so rapid a diminution of glycogen in the liver when arsenic is given with food; why the organ undergoes fatty degeneration; and also the effect on malaria, and the subsidence of lymphonata, under its use.—*Lancet*, Feb. 8, 1879.

Changes in Calomel.

MM. Mialhe and Laroque have demonstrated that calomel may give rise in the organism to bichloride of mercury under the influence of the alkaline chlorides of the economy. Polk has recently pointed out the fact that phenomena of poison-

ing may arise after the administration of an old mixture of calomel and sugar, or of calomel and magnesia. M. JOLLY has taken up again (*Gazette Médicale de Paris*, 9 Nov. 1878) these important therapeutical questions, and has arrived at the following conclusion: The alkalies, their carbonates and the earthy bases, transform calomel into corrosive sublimate with more or less activity. White and refined sugars have no action on the mercurial salts. Rough sugars are often acid (colonial sugar) or alkaline (beet-root sugar), on account of the small quantity of hydrate of lime which they contain; it is to the impurity of the sugar and to their action on the calomel, that we must impute the phenomena of poisoning observed by Polk. The practical conclusion of M. Jolly's study is, that when calomel is employed internally, we must avoid associating its salts with acids, alkalies, chlorides, and raw sugar.—*London Med. Record*, Dec. 15, 1878.

On the Deodorization of Iodoform.

It is well known that the offensive smell of this most valuable drug, iodoform, often prevents its use. Dr. GUTSCHER (*Wiener Med. Woch.*, No. 2, 1879) offers the following suggestions for improving it: Any ethereal oil which possesses a strong aromatic odour would overpower the smell of the drug. He made the experiment by adding to each of his preparations of iodoform six drops of peppermint oil, and rubbing them well together. In a few moments the smell of the iodoform had entirely vanished.—*London Med. Record*, Feb. 15, 1879.

Medicine.

Contagiousness of Tuberculosis.

Dr. REICH, of Mülheim, reports (*Berlin Klin. Woch.*, Sept. 1878) a singular series of cases in which tuberculosis seemed to be communicated directly, from mouth to mouth, to a number of children by a phthisical midwife. There were in Neuenbourg two midwives, Mme. R. and Mme. S., the latter being distinctly phthisical, with an abundant purulent expectoration. Dr. R., having one day delivered a patient by turning, noticed the nurse S. sucking the mucus from the mouth of the child, and blowing directly into the lungs, mouth to mouth, to establish respiration. This child, at the end of three weeks, began to droop, and died in three months of tubercular meningitis. Shortly afterwards two other children, under the care of the same nurse, died of the same disease. Dr. R., having his suspicions in this way aroused, made inquiry, and found that from 4th April, 1875, to 10th May, 1876, seven children, besides the three already mentioned, all attended by Mme. S., had been carried off by tubercular meningitis within their first year. Nothing of this kind happened in the practice of Mme. R. during the same period. In July, 1876, Mme. S. herself died of consumption. It was well known that this nurse was accustomed to clean the children's mouths of mucus in the manner above described; she was also very kind to her little patients, constantly kissing and caressing them.—*Glasgow Med. Journal*, Feb. 1879.

Congenital Cyanosis.

M. COSSY (*Progrès Médical*, January, 1878) presented to the Société Anatomique of Paris the following case of congenital cyanosis. A young man, aged

20, had from his birth presented marked cyanosis of the face and limbs, accompanied with palpitation and slight dyspnoea. On his admission into hospital, the anterior and upper part of the chest was covered with dilated veins; his fingers were clubbed, the liver was very large, and the urine loaded with albumen. A very loud double bellows-sound was heard over the cardiac apex; at the base, and loudest over the pulmonary artery, a murmur similar in tone and intensity was heard, but it was single, systolic, and prolonged through the whole cardiac revolution. Autopsy showed the heart to be generally hypertrophied, the septum between the auricles was complete, but there was a large opening in the upper part of the interventricular septum; the pulmonary artery was much constricted at its origin, and its valves thickened and roughened. Ductus arteriosus closed, aorta normal, lungs simply congested.

This case presented, as most such cases do, a combination of the two conditions which have been regarded as capable of causing congenital cyanosis, viz., pulmonary stenosis and communication between the right and left heart. Two opposite theories have been put forward to explain the cyanosis. Morgagni, Louis, Gendrin, Bérard, Cruveilhier, and others maintain that it is due simply to an obstruction in the circulation, or capillary stasis. Cloquet, Gintrac, and others, on the other hand, maintain that it is due to a mixture of arterial and venous blood through a communication either between the right and left auricle (patent foramen ovale) or right and left ventricle. Those who hold the first view believe that the pulmonary stenosis is primitive, and the communication between the right and left heart consecutive; those who support the other view contend that the communication between the two sides of the heart is first in order of development, and is the cause of the narrowing of the pulmonary artery, for, they say, if there is an opening between the ventricles, the blood in the right ventricle tends to pass into the left ventricle instead of into the pulmonary artery, which becomes narrowed. The first of these theories seems the best, for the cases on record fall into three groups. In the first, and by far the largest group, there exist both pulmonary stenosis and communication between the right and left heart; in the second there is either a patent foramen ovale, or an opening between the two ventricles, and no constriction of the pulmonary artery (note, however, that when this is the case, there coexists disease of the tricuspid valve, either narrowing or insufficiency, sufficient to cause blood stasis); while there is a third group, in which persistent foramen ovale has been found, without any cyanosis. Two such cases have been presented to the Société Anatomique. Hence we conclude, with Louis, that congenital cyanosis is due rather to blood stasis than to the circulation of a mixture of arterial and venous blood. But Louis's law required that the narrowed or impermeable pulmonary artery should be associated with (as a consequence) a patent ductus arteriosus. It is necessary to respiration and to life, and it is usually found open in autopsies of these cases. But in M. Cossy's case it was *impermeable*! There must then have been a collateral circulation established here of a very sufficient kind, since life was maintained for twenty years. The bronchial arteries, unfortunately, were not examined. They may have been greatly dilated, as has been observed in certain cases. But in such instances caseous pneumonia is usually found to exist in consequence of imperfect nutrition of the lungs; the lungs in M. Cossy's case were simply congested. As to abnormal cardiac bruits, they may be entirely absent; but this is rare; nearly always there is a bellows murmur, single, systolic, most intense at the base and to the left of the sternum. The second of the two murmurs heard over the apex in the case narrated above was probably caused by the passage of the blood through the orifice in the ventricular septum.—*London Med. Record*, Feb. 15, 1879.

Spontaneous Septicæmia.

The diagnosis of blood-poisoning, when it occurs as a sequel to traumatic suppuration, the result of injury or operation, is usually attended with comparatively few difficulties. It is very different, however, in the case of the so-called spontaneous septicæmia, in which the source of the blood-poisoning has developed without any external injury to indicate its probable seat, and in which the symptoms of the primary mischief may be entirely latent. The subject of the diagnosis of these cases has lately received systematic consideration by Professor LEUBE, in the *Deutsches Archiv für Klinische Medicin*, based on the symptoms in a series of examples which have come under his notice. He points out how preferable is a name such as "cryptogenetic," which expresses merely the fact of the latency of origin, rather than one which suggests a spontaneity which cannot, strictly speaking, be said to obtain. The general type of these cases is the following. Without obvious cause, a patient is seized with rigors and fever, sometimes with vomiting and diarrhœa, and pains in the limbs, especially on movement, followed by a comatose state, with muscular twitchings, often general hyperæsthesia, indications of paralysis, with involuntary evacuations, and often Cheyne-Stokes's breathing. Frequently there are extravasations, conjunctival or cutaneous; and sometimes a characteristic eruption on the skin, small vesicles with a hemorrhagic halo, and occasionally pemphigus or hemorrhagic pustules. Endocarditis and pericarditis may be present, the spleen is swollen, and the temperature may reach 106° or 107°. In the most acute cases the fever is almost continuous. In sub-acute cases remissions and paroxysmal elevations are to be noted, accompanied with rigors; sometimes the initial rigor is constant, but it may be the only attack of shivering noticed. In the lungs the scattered foci of suppuration may sometimes, although rarely, cause symptoms recognizable during life. Large infarctions cause symptoms, and "metastatic" pleurisy is very common. In all cases, post mortem, cardiac changes were present, endocarditis, ecchymoses, or foci of suppuration. In several, endocarditic murmurs were observed during life. The blood showed in all cases leucocytosis, and in one case there were small, irregular, refracting whitish corpuscles, in lively movement, possibly aggregations of bacteria. The abdominal organs, with the exception of the spleen, presented no notable symptoms. In one case the erroneous diagnosis of peritonitis was made, in consequence of the extreme cutaneous hyperæsthesia, due to the state of the nervous system. Albuminuria, however, was frequent, and the kidneys in most cases presented evidence of parenchymatous inflammation. These symptoms alone possess little diagnostic value, but their significance is greatly increased by their association with the cutaneous eruption above described, an eruption which has the characters of no known skin disease. The hemorrhagic spots with yellow pustular centres are strikingly similar to the minute foci of suppuration found post mortem in many organs. In one case these pustules were found, during life, to contain bacteria. The extravasation is the first change, and may be due to the local disturbance of the blood and bloodvessels, occasioned by the accumulation at the spot of toxic substance. Joint inflammations, on which much stress is commonly laid, were, in Leube's cases, far less frequent than the alteration of the skin.

Much interest attaches to the participation of the central nervous system in the morbid process. They were absent in no case, and in most presented the same characters, resembling for the most part those of a meningitis of the convexity, and a purulent meningitis was in one case actually present, while in most there were injection of the membranes and minute extravasations into the cortical substance. The somnolence or coma is accompanied by convulsive movements of

the extremities, sometimes tonic spasm in the muscles of the neck, and with a variable condition of the pupils.

The chief importance of these symptoms attaches to the question of the differential diagnosis of the disease. In several cases the amount of albumen and the presence of casts in the urine gave rise to the suspicion that the symptoms were due to uræmia, but against this the temperature and the character of the nervous symptoms were conclusive. A greater difficulty attends the diagnosis of this condition from acute miliary tuberculosis. Now and then the clinical features of the two forms of disease are absolutely identical. Miliary tuberculosis may begin with a rigor and high fever, and bronchitis, pleurisy, swelling of the spleen, albuminuria, and cerebral symptoms, from meningeal complication, may attend the course of tuberculosis. Even cutaneous petechiæ and herpes may not be absent. All that can be affirmed of the diagnosis in such cases is that the more rapid the course of the disease, the more suddenly the general symptoms set in, the more probable is the disease to be septicæmic.

From typhoid the distinctions are more simple, and important indications are afforded by the course of the temperature, and by the absence of the retinal hemorrhages which are so common in septicæmia. Greater difficulty is presented by the distinction of the cerebral symptoms from those due to simple meningitis, but the presence of the symptoms of a general disease, the enlargement of the spleen, and the cutaneous changes, enable a distinction to be made. The prominence of certain symptoms in individual cases may constitute a fresh source of perplexity. Of these, however, the greatest difficulty attends the distinction from ulcerative endocarditis, and, indeed, in the majority of cases the distinction is impossible. The occurrence of an embolic myocarditis or a micrococcal endocarditis, or both, or neither, depends upon accidental circumstances. "Malignant endocarditis" is only a manifestation of the so-called "septic pyæmia," and is not an independent disease.—*Lancet*, Feb. 22, 1879.

On a Case of Intermittent Tetanic Fever.

FROMMÜLLER gives in the *Memorabilien für Prakt. Aerzte*, No. 11, the following interesting account of a patient, aged 26, who had been healthy all his life, till about two years ago, when he had a severe chill, which was followed by an illness lasting four weeks; the principal symptoms of which, according to his account, consisted in periodically repeated convulsions, which proceeded from the spine. The next year he suffered from quotidian fever, was cured, but in the same year received a blow on the head, which left a scar of about an inch long, on the lower part of the left parietal bone. He was treated for scabies in the next year, and after having been cured was imprisoned for some petty offence. During this latter period he complained of headache and pains in the side, and returned to the hospital. He was a weak, ill-nourished subject, of a livid complexion; he complained of cold, shivered, and spoke of wandering pains, especially in the head. These were ascribed to rheumatism, and he was treated accordingly. This happened on April 23d. On the night between the 24th and 25th he was suddenly seized with opisthotonos and trismus, the lower extremities were kicking spasmodically, the eyes wide open, he was unconscious, and uttered inarticulate sounds; sensibility was extinct over the whole body. This paroxysm lasted for about fifteen minutes. He felt better the next morning, and only complained of the fifth to eighth spinal vertebrae being tender on pressure. During the next two days seven similar paroxysms occurred, mostly at night. They were not epileptic fits, as the thumbs were not drawn in; there was no froth on the lips; the patient's body was cold, and sensibility was extinct as before.

From that time the paroxysms were reduced to a single one, which was repeated every evening with almost the same symptoms, and accompanied by rigor. The face was red, the eyes open, and the pupils moderately dilated. As all treatment had hitherto proved unsuccessful, it was resolved to treat the disease as an intermittent fever with quinine, which was given in doses of five decigrammes three times daily. The paroxysms ceased, the patient felt better, and was soon able to leave the hospital. He subsequently informed the reporter that his native village was surrounded by ponds, and that malaria was rife there.—*London Med. Record*, Feb. 15, 1879.

A Typhoid Epidemic Originating in Diseased Meat.

A most remarkable epidemic of typhoid fever, which seems clearly traceable to eating the flesh of a calf that had probably died of typhoid fever, is described by Dr. WALDER, Assistant Physician to the Zürich Hospital, in the *Berliner Klin. Wochenschrift*, No. 39, 1878. On May 30, 1878, a choral festival was held at Kloton, Canton Zürich, and was attended by about 700 members of neighbouring choirs. A public breakfast, consisting of stewed veal and sausages, took place at 9 A. M. At 3 P. M. there was a somewhat similar repast, with the addition of soup, potatoes, salad, and wine. Water was drunk by only a very few persons, and always mixed with wine. Of those who took part in these meals, about 500 sooner or later fell ill. The greater number were not attacked for two or three days after the festival, though a few were unwell on the next day. Dr. Walder calculates that 39 to 40 per cent. of all the cases were taken on the fifth and sixth days, and 90 per cent. within the first eight days. The general characters of the symptoms were those of typhoid fever of various degrees of intensity, from mild abortive forms to those accompanied by severe delirium, intestinal hemorrhage, and high fever. The epidemic presented two deviations from the ordinary run of typhoid epidemics—that the fever rose very rapidly at first, so as often to reach its height on the second day; and that diarrhoea was less common than usual, and less obstinate. Temperatures of 40° C. were not uncommon, and those of 40.5° to 40.8° were several times observed. Most of the patients exhibited the typhoid roseolar eruption, and the spleen was enlarged in all those cases which were examined at the acme of the disease. Dr. Walder states that most of the patients whom he especially examined had swelling of the external lymphatic glands, especially the inguinal, and that the swelling disappeared when the fever left them. In the course of the epidemic, the usual complications of typhoid fever occurred. Four cases relapsed, one of which, a youth aged sixteen, eventually died from perforation of the bowel and general peritonitis. When Dr. Walder wrote, twenty-seven cases of secondary infection had taken place, the patients having either been engaged in nursing those primarily affected, or in washing their linen, removing their motions, etc. Some secondary cases induced by sleeping in the same bed with primary were more severe than the latter, but as a rule the secondary cases were milder than the primary. The post-mortem examination of several fatal cases, four of which Dr. Walder reports *in extenso*, confirms the diagnosis of typhoid fever so as to leave not the slightest doubt as to the nature of the disease.

We now come to the probable source of infection of those persons who took part in the festival at Kloton. The greater part of the meat eaten on this occasion was supplied by the village innkeeper, who was also the village butcher, and all of it (veal, pork, and beef) had been pronounced by a professional inspector perfectly healthy, with the exception of forty-three pounds of veal, which were sent from a butcher at Seebach two days before the festival, and had not been examined by the inspector. The calf from which it came belonged to a peasant.

It was only a few days old, and was probably only killed because it was certain to die very speedily from illness. It would not suck, it lay on the straw, cried out when touched as if in pain, and at the last kept lowing loudly. The evidence that the flesh of this calf caused the epidemic is very strong. Not only the partakers in the feast who ate this particular veal stewed with the other healthy meat were attacked, but families which took no part in the feast, and in which the children had had meat and sausages given them by persons who could not get through what was served out to them, suffered. The lungs of the above unfortunate calf were sold to a lady at Seebach, and the brain to the clergyman of the parish. Three persons who dined off the lungs made into stew were taken ill exactly like the members of the choirs, and the clergyman's family was similarly affected. The bones were sold to a dealer at Seebach, and his dog, which ate part of them, was ill for about a week. Moreover, several persons who bought meat either on the day of the festival or on the previous day from the Kloten butcher also suffered, as did a number who had bought sausages from the same establishment, and persons who had taken no part in the festival, but had dined at the inn kept by the butcher, were laid up. Dr. Walder supposes, with good reason, that healthy meat became infected either by direct contact with the diseased veal, or by having been cut by the same knife.

It should be mentioned that there had been no epidemic of typhoid fever either in Kloten or the neighbouring villages for many years; and although, as a fact, there was a single case of typhoid fever at Kloten at the time of the festival, the patient lived a long way both from the place where the feast was held and from the butcher's shop. The water used for cooking and drinking was supplied from a hill on the other side of the village through iron pipes. The first person who suggested the origin of the epidemic in the typhoid fever of calves or oxen was Professor Huguenin, of Zürich, but his suggestion was long received with considerable scepticism, as scarcely anything was known about the occurrence of the disease in those animals. The correctness of his hypothesis, however, is strongly corroborated by Dr. Walder's discovery of the infection of two calves belonging to one of his patients suffering at the time from typhoid fever. A post-mortem examination of one of these animals showed intense swelling of the Peyer's patches throughout the whole of the small intestine, but especially in the lower part, with swelling of the retro-peritoneal and mesenteric glands. The spleen was enlarged. The heart, the lungs, and liver, as well as the joints, were all healthy. There were several small hemorrhages into the left kidney. No similar cases have ever occurred, before or since, among this farmer's cattle, and it seems most probable that the farmer himself was the infecting agent, and that during one of the fits of severe diarrhœa from which he suffered in the first week of his illness he must have passed a motion in the neighbourhood of the stall, as during this time he was continually attending to the cattle himself. Another case, in which a calf was almost certainly infected by a human being, occurred later on. Here a bucket which had been used for washing the viscera of two patients who had died of typhoid fever, and on whom a post-mortem was made, was soon after filled with water for the calves to drink, and it seems probable that some blood which remained on the outside was licked up by the calf, or else was transferred to the stockings of the cow-boy, which the animal was in the habit of licking. After an incubative period of exactly ten days, the calf was taken ill, and it was killed four days later. The pathological changes were exactly the same as in the other case, and microscopically the calves' intestines in both cases were indistinguishable from a human intestine in the same stage of typhoid fever.

A detailed account of the above epidemic will be published in a few months, but meanwhile our readers will, no doubt, be interested to have an outline sketch

of what seems to be a newly detected source of infection of the poor human body by "typhoid poison."—*Med. Times and Gazette*, Feb. 8, 1879.

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Recent Observations on Scarlatina.

Dr. HENOCH, of Berlin, has had the opportunity, in his position as physician to the Charité Hospital, of observing carefully a great number of scarlatina cases. He has published his observations in the third volume of the *Charité Annalen* for 1878. He divides the different accidents which are apt to happen during the course of the disease into four classes, viz., anomalies of temperature; malignity of the disease; complications which may arise during it; and nervous symptoms.

As regards anomalies of temperature, the following observations have been made: 1. The temperature may rise slowly whilst the exanthem appears distinctly on the first day; 2. The temperature is very high the first day, but falls on the next, and remains normal during the whole of the illness; 3. The temperature is exceedingly low during the whole of the illness; 4. Both the high temperature and the rash last abnormally long; great care ought, however, to be taken here not to mistake the febrile heat which may originate from some hitherto latent complication for the fever of scarlatina. Such complications may be—*e. g.*, otitis externa or media, protracted diphtheria of the pharynx, and inflammations of the submaxillary glands.

As regards the malignity of the disease, apparently dangerous symptoms are often met with. For instance, the temperature remains very high; the patient is somnolent and delirious. If, however, by antipyretic treatment, as tepid baths, quinine, salicylic acid, etc., we succeed in reducing them, we may be sure that the case is not malignant. But if our treatment fail to produce the desired effect on the above mentioned symptoms, the prognosis is sure to be very bad. This different issue in cases which seem at first to present the same range of symptoms, is explained by the action of the contagium matter of scarlatina on the centres of the vagus nerve. That the latter is affected is clearly shown in these cases by the symptoms of weakness of the heart, such as a quick soft pulse, cold hands and feet although the temperature of the body be high, and irregularity in the breaking out of the rash.

If the above mentioned debility of heart take place after the rash has come out, and during the first week of the disease, the case is perhaps a little less dangerous; but then the disease is almost always accompanied by diphtheria of the pharynx and the nose. The temperature may either remain very high up to the moment of death, or fall considerably. If the patient have suffered from diarrhoea since the beginning of his illness, and no plausible reason can be given for it, the prognosis is very unfavourable. This Dr. Henoch ascribes to paralysis of the splanchnic nerve caused by the contagious matter. A few cases have been observed in the Charité where diphtheritic angina seemed to precede the eruption, but Henoch thinks that here the primary disease was really diphtheria, but that the patient caught scarlatina by infection, the first symptom of scarlet fever being *always* a simple angina, which develops into diphtheria only on the third or fourth day of the illness, stomatitis, diphtheria, or what is still worse, coryza, which sometimes is the cause of most dangerous forms of conjunctivitis. The diphtheritic affection often spreads over the larynx, but very seldom passes beyond the vocal cords. Dr. Henoch has never seen any cases of paralysis arising from diphtheria, in scarlet fever. The dyspnoea which sometimes appears is caused by the enormous swelling of the tonsils and other parts of the pharynx. In three cases, angina Ludovici was caused by diphtheria of the pharynx. It is often dangerous to make incisions into the submaxillary glands when there is inflamma-

tion, as some branches of the external jugular vein, or the latter itself, may be affected and thereby cause very serious hemorrhages.

Inflammations of the respiratory organs occur very often, and are most dangerous. Dr. Hensch met with catarrh of the trachea and the bronchi, and with pneumonia and pleurisy on one or both sides.

In inflammations of the serous membranes, the synovial membranes of the joints are first affected; sometimes there are also swelling and stiffness. In some cases, these inflammations were followed by pleurisy and peritonitis, in another case by endocarditis, and in a third by endocarditis and chorea. Diseases of the heart also occur after scarlatina, even when the articulations have not been affected.

Nervous symptoms are also observed. In young children, the illness is sometimes preceded by convulsions. In two cases, the patients complained of pain in the tips of their fingers, although the joints were perfectly free. Paralysis of the facial nerve is often caused by swollen glands pressing on the mastoid process, or by caries of the petrous bone. Chorea was twice noticed, and once locomotor ataxy of the lower extremities. In complicated malignant cases, there is often found an eruption very similar to those which occur in measles, the so-called variegated scarlatina. A cyanotic hue of the skin is a very bad symptom, because it only occurs in cases of extreme debility of the heart. Gangrene of the skin, bed-sores, and necrosis of the cartilage of the nose, are often found; also subcutaneous abscesses in different parts of the body, especially in weak children. The author's treatment consists in tepid baths (he objects to cold ones), and in administering stimulants, such as alcohol, coffee, camphor, musk, etc.

Of late, several cases of scarlatina occurring immediately after some surgical operation have been observed, a few of which recently happened in France under the treatment of M. Trélat (see *British Medical Journal*, November 9th).

Looking at the above-mentioned facts, Dr. Hensch concludes that, if scarlatina occur in the course of some surgical affection, it has a very unfavourable influence on the wounds; and that in children scarlatina seems often to result from an operation; at least, a great many cases have come under observation in which this has happened. What may be the cause of this is not yet quite clear. Paget supposes that the prostration which follows an operation makes the patient more sensitive to contagion. But this is only a hypothesis; and, besides, scarlatina has been observed in surgical patients where the possibility of infection was entirely out of the question.

Acute mania has also been known to occur in scarlet fever, perhaps from the same unknown causes from which mental disturbances have been observed to arise, either during or immediately after acute articular rheumatism of the joints, erysipelas, etc. A very interesting case of mania has been observed in France, and published in the *Union Médicale du Nord-Est* by M. Flamain. The patient, a girl aged 22, was in the fourth day of a severe attack of scarlatina, when she suddenly showed very extraordinary mental disturbances. Whenever she was quiet, her face wore a certain expression of pain, her voice was weak, plaintive, and her intellect perfectly clear. Suddenly, without any intermediate stage, her face became joyous, her speech loud and animated; she began to sing, to laugh, or to say many things. A few moments later, the delirium was gone as suddenly as it had come on; but the patient remembered what had happened, and tried to apologize for it, by saying that she could not help it. During the two following days, this delirious state continued, but it manifested itself in different ways and at intervals. Sometimes the patient was exceedingly merry; at other times she was in an ecstatic state; then, again, great excitement prevailed; which was followed by utter prostration. On the next day, the delirium, which hitherto

had only shown itself in the wanderings of her mind, suddenly changed and became violent; the patient screamed, gesticulated, tried to rise from her bed; and it was all that two strong men could do to hold her back. Forty-five grains of chloral and six-tenths of a grain of morphine had no effect upon her. This violent stage lasted for eight or ten hours, and then gave way to a sort of epilepsy. Then another change occurred again; during two days, the patient was quiet, her intellect seemed to regain its lucidity, she perspired abundantly, but had fits of spitting, like lunatics; she refused to drink; her bowels were constipated; she passed very little urine, which contained a great quantity of albumen. Towards the end of this last day, her pulse became quick, she was perfectly quiet, fell suddenly into a profound coma, and expired two hours later. As far as could be ascertained from her relatives, the girl's father had died from an affection of the nervous centres, but she, and the rest of her family, had always been healthy. Dr. Flamin observes that the cause of death in this case could not be scarlatina, the latter not being malignant and its course in every respect perfectly regular. Uræmia was entirely out of the question, as it manifests itself usually at a much later period of the disease, and consists of entirely different phenomena. The only plausible explanation, therefore, in this case is acute mania, occurring in a person with hereditary predisposition.—*British Medical Journal*, Jan. 4, 1879.

Rheumatoid Arthritis.

At a late meeting of the Clinical Society of London (*Lancet*, March 1, 1879) Dr. W. M. ORD read a paper on Rheumatoid Arthritis from a Clinical Point of View. Thirty-three cases of that form of rheumatoid arthritis, which has been called by Haygarth "Nodosity of the Joints," and by Heberdeen "Digitorum Nodi," were analyzed. All had occurred in women, and in all disturbances of the menstrual function, or disorders involving hyperemia of the uterus and its appendages, were present. By the term "nodosity of the joints" was understood a symmetrical affection of many joints, chiefly of the hands, the affected joints becoming enlarged at their periphery, loosened by loss of surface, and ultimately much distorted; the smaller joints being first affected, and extension taking place in a symmetrical progressive way from these to the larger joints. The subjects belonged in large proportion to the middle classes, and were mostly between thirty and forty years of age. Several of them were distinctly passing through the climacteric period of life. Although many were anæmic, amenorrhœa did not exist in any. Dysmenorrhœa was noted in fourteen, half of which had also menorrhagia. Of the remainder, several had menorrhagia simply, four had it in conjunction with ovaritis, and others in conjunction with the change of life or with tumours. The relation of the arthritis brought out by the cases was, first, its commencement in conjunction with menstrual disturbance; secondly, its paroxysmal exacerbation during, before, or after menstrual periods; thirdly, its cessation as an active or progressive mischief on the cessation of the menstrual disorder; fourthly, its alternation with cerebral disturbance of an hysterical kind. Some cases were more fully detailed: 1. A case in which intense affection of the upper extremities was noted, in conjunction with severe dysmenorrhœa and menorrhagia. When constitutional treatment and the measures usually applied to the control of the rheumatic process had failed, the uterine conditions were treated successfully, with the result that the arthritis, as an active process, ceased, leaving, of course, the nodosity, but a painless nodosity. 2. Two cases in which the arthritis began at the climacteric period in combination with painless menorrhagia, and ceased as an active process on the final disappearance of the catamenia. In one the first attack occurred at a time when the catamenia, having been absent a whole year, returned in unusual excess; when the joints lost all

inflammation and pain during a subsequent interval, but became severely inflamed, greatly swollen and painful during several subsequent menorrhagic periods. 3. A case in which a woman suffering from polyarticular arthritis at the climacteric period, the arthritis undergoing little remission in the intervals between the menstrual flow, developed somewhat suddenly hysterical mania. On the establishment of the mania the arthritis became perfectly quiescent, and remained so till the restoration of sanity. Sanity having returned, the arthritis resumed its progress. In this instance the excitement propagated from the uterine organs, instead of undergoing reflexion from the cord, was, as it were, refracted through the cord to the higher centres. The arguments founded upon these cases were, first, that there was good evidence to show the connection of this form of polyarticular arthritis with the uterine hyperemia. It was argued, further, that the incitation to the arthritis was conveyed by the nervous system in a reflex way. In support of this view it was advanced that certain lesions of the central nervous system were known to be capable of producing trophic changes in joints, identical with those of chronic rheumatoid arthritis; that urinary paraplegia was an evidence of the possibility that a paralyzing influence might be reflected; that therefore it was reasonable to suppose that trophic influence should be reflected, and that the mode of association of the arthritis and the uterine disorder favoured the idea of a nervous nexus, and the idea of this consisting in reflex action through the cord. The gonorrhœal and urethral arthritis of men were compared with the affections under consideration, and it was pointed out that the parts concerned with two cases were homologous parts. It was lastly argued that the local morbid process present in these cases was the same as that existing in non-articular arthritis, in traumatic and other surgical arthritis, in gonorrhœal and urethral arthritis, in joints affected by morbid deposits and morbid growths, in certain cases after true rheumatism, and in all cases coming under the head of rheumatoid arthritis; and that the term "rheumatoid arthritis" insufficiently covered the variety of clinical aspects of the joint affection; that, therefore, it was desirable to limit or annul the use of the word "rheumatoid," and apply before the word "arthritis" some qualifying term descriptive in each case of the supposed clinical association. Ricord's term "blenorrahagic arthritis," as opposed to the term "urethral rheumatism," was quoted as an instance of such application.

Mr. BARWELL, preferring the term "arthritis deformans" to "rheumatoid arthritis" for a disease which had nothing to do with rheumatism, could not admit the dependence of this affection upon uterine disorders. The changes in the joints were most characteristic; the cartilage becoming fibrillated and degenerate, and dendritic growth spreading downwards into the bone, which comes to assume a worm-eaten appearance, whilst new ossific deposit occurs in the structures around the joint; and he could hardly think all these changes could be dependent upon uterine disorders. For himself, he should rather regard the increase in the joint affection at the menstrual periods to be due to the exacerbations of local disease which surgeons are accustomed to see in women at these times. Moreover this particular disease is quite as prevalent in men as in women.

Mr. BRYANT was disposed to regard the cases described by Dr. Ord as allied to gout, whereas the disease which Mr. Barwell had sketched out was that termed "osteo-arthritis," which has very little to do with either rheumatism or gout. He had failed to recognize in Dr. Ord's cases the characters of osteo-arthritis. He should say that, as a rule, the majority of cases (of this disease) were met with in male subjects, and when met with in females it was at an advanced age.

Dr. GREENFIELD had arrived independently at similar conclusions to Dr. Ord, and felt convinced of the association between uterine disorders and the joint

affections in question. But there was no precise unanimity as to what is meant by rheumatoid arthritis, some describing it as chronic rheumatic arthritis others as osteo-arthritis. The chronic osteo-arthritis of the hip is a different affection from the general affection now under notice, where the joints are symmetrically affected and in a definite order. Such cases in his experience were far more frequent in women. He could recall cases in which there was a marked clinical relation between leucorrhœal discharge, or other uterine disturbance, and the joint affection, which in males might be associated with spermatorrhœa. The increase and abatement of the articular swelling *pari passu* with the aggravation or improvement in the disorder of the genito-urinary tract was more than a coincidence. He knew of the case of a young man, twenty-five years of age, who had long been subject to seminal discharges and evidence of irritation about the prostatic urethra, who gets all the joints of his hands and feet affected whenever the spermatorrhœa is excessive. The recognition of some connection between the two was of importance in treatment. Dr. Greenfield could hardly accept the neuropathic theory advanced by Dr. Ord, but believed the arthritis to be allied in its pathology to that met with in "gonorrhœal rheumatism," "blenorragic rheumatism," etc.,—that it was, in fact, due to the absorption of septic or irritating matters by the urethral or vesical mucous membrane in the male, or by the urethra and vagina in the female. As to treatment, active measures were certainly powerless when applied to the joint affection only; and certainly more benefit was derived by attention to the local conditions.

Dr. DYCE DUCKWORTH could not doubt that Dr. Ord's cases were true examples of osteo-arthritis, a subject to which the paper added much that was worthy of careful consideration. He had himself met with no facts sufficient to warrant the view of the hereditary nature of the disease. He had met with it amongst women at the climacteric period, especially those of broken health, who had borne large families. Still he had seen typical cases in much younger subjects—*e. g.*, at the age of fourteen or fifteen years. In cases of true osteo-arthritis the fingers are drawn to the ulnar side.

Dr. ORD, in reply, said that the large ground over which he had to travel made it impossible for him to take up all the points within the allotted time. He remarked that two of his principal critics had viewed the subject from a purely surgical standpoint; and their opinions had not been shared in by those who were physicians. This difference in view no doubt depended on the different class of cases coming before the surgeon and physician respectively. The essential changes in the affected joints, to which Mr. Bardwell had alluded, consisted in a process of waste of cartilage and of underlying bone, with overgrowth of periosteum, cartilage, and synovial structures at the periphery of the joint. Such changes produced a tendency to laxity of the joint and spontaneous dislocations, with, in the case on hand, adduction of the fingers on the metacarpus. These changes were precisely paralleled by those described by Charcot in the affected joints of the subjects of locomotor ataxy. Authorities differ as to the sexual liability; thus Haygarth asserts that women are chiefly affected, Adams that men are most subject to the disease; but the one deals with a "polyarticular" affection, the other with a "monarticular." Trousseau asserts its greater frequency among women of the better class; Follin and Duplay describe "arthrite sèche" as being chiefly met with in men of the poorer classes. It was obvious that these writers must be speaking of different affections. There was no clear evidence of an underlying diathesis, and, with Dr. Duckworth, he objected to admit that it was a hereditary disease. He could pass no opinion as to the value of arterial tension in discriminating these cases. In all his cases he had failed to find uratic deposits, and had thereby excluded gout. Dr. Greenfield's observations agreed with his own, but there was a difference between their views as to the ultimate

pathology of this disease. He thought there was more ground in favour of neurotic influences than of septic, and this he based on the knowledge of joint affections in cases of lesion of the central nervous system or on the occurrence of reflex paraplegia. Might not a joint affection be produced in a reflex manner by those parts of the spinal cord being stimulated which especially govern the nutrition of joints?

Treatment of Delirium Tremens.

DR. GEORGE W. BALFOUR, Physician to the Royal Infirmary, Edinburgh, advocates (*Lancet*, Feb. 1, 1879) the treatment of delirium tremens by chloral. He says so far as our present experience is concerned, we seem to possess in hydrate of chloral a remedy which in all such cases, from the slightest to the most severe, acts rapidly, safely, and efficaciously—*cito, tuto, et jucunde*—and which seems to deprive indulgence in drink of all its horrors and nearly all its dangers. Unquestionably fatal cases must occasionally occur under this as well as under other modes of treatment, but the number of them must be much decreased, because, from the rapidity with which a cure is brought about, many dangerous risks are averted. Thus, we avoid all the risks arising from a long continuance of maniacal excitement, or from a suicidal state of mind, all risk from the exhaustion following persistent sleeplessness, or defective nutrition, the result of long-continued insufficiency of food, etc. The risks the patient actually runs are not now, as formerly, connected with the treatment, but with his previous state of health. Thus, if he has a fatty heart, or has been exhausted by long-continued debauchery, or if he is from any cause an epileptic, he may die suddenly during the attack. But if he is otherwise healthy, he is sure of a safe and speedy convalescence.

It has been my experience that there are very few cases indeed which yield to a less dose than fifty grains, and a considerable number which require a good deal more; those cases requiring the largest doses being those ushered in by the *status epilepticus*, which chloral arrests as rapidly and safely as it does delirium tremens itself. But even in these cases I have never required to give more than 120 grains of Leibreich's chloral, in divided doses, and this dose, though large, is not a dangerous one. Richardson tells us that the dose of chloral is proportionate to the weight of the animal, that a human subject weighing 120 to 140 lb. is thrown into a deep sleep by a dose of ninety grains, and into a sleep that is dangerous by a dose of 140 grains. He finds also that an individual who has taken enough of chloral to be affected by it gets rid of it at the rate of seven grains an hour, so that though 144 grains given at once is a dangerous dose, yet twelve grains may be given every two hours for twelve times with perfect safety. From the irritated condition of the mucous lining of the stomach of a drunkard, it is probable that the absorption of ingested fluids is not so rapid as usual; it is but fair, therefore, for that reason also, to allow a moderate interval between the doses, so as to avoid as far as possible any risk of giving more than enough. At the same time we must shun the opposite extreme of giving doses in themselves too small to have any decided effect, and which have any possible cumulative effect destroyed by too long an interval being permitted to elapse between the giving of each dose.

Acting upon the principles involved in the foregoing statements, I have for long been in the habit of treating cases of delirium tremens by giving forty grains of chloral hydrate every hour, for three hours if necessary. Sometimes, but rarely, the first dose has been enough, most commonly two doses have been required, and it has only been in the very rarest instances that the third dose has been necessary. If the attack be ushered in by the *status epilepticus*, I shorten the interval between the doses to half an hour, as in these cases time is of the utmost import-

ance, and a large dose is sure to be required. Should the heart be feeble, I give each dose of chloral in half an ounce or an ounce of the infusion of digitalis; the chloral, unlike the bromide, has no tendency to weaken the heart's action, while, like chloroform, it seems to induce a more equable distribution of the blood, the digitalis toning the heart, and increasing the arterial blood-pressure.

Dr. Balfour at the same time deprecates the use of alcohol in the treatment of delirium tremens.

Bromine in Laryngeal Croup.

Dr. W. REDENBACHER writes in the *Ärztliches Intelligenz-Blatt* of January 7th, that he has obtained strikingly good effects in two cases of laryngeal croup from the internal administration of bromine (in the form of bromide of potassium). For some time, bromine inhalations have been used in the following manner: From 0.2 to 0.3 gramme of bromine, with a similar or greater quantity of bromide of potassium, has been dissolved in 120 grammes of water, and, a sponge or handkerchief dipped in it being tied before the nose and mouth, the bromine-vapour has been inhaled for five or ten minutes at intervals varying from half an hour to an hour. From this method, however, Dr. Redenbacher has not been able to obtain any good result. Two little girls, aged respectively five and seven, having come under his care with severe croup of the larynx and air-tubes, he ordered a tablespoonful of the following mixture to be taken every hour: *R.* Decocti althææ 120 grm.; potassii bromidi 4 grm.; bromi 0.3 grm.; syrupi simplicis 80 grm. On again visiting the patients, whom he did not expect to find alive, he was most agreeably surprised. The harsh respiratory murmur, the difficult breathing, the dry characteristic cough, the loss of tone in the voice, had all disappeared; the breathing was free, the cough loose, and the hoarseness diminished. Several portions of croupal membrane had been coughed up. The improvement continued on the next day, and perfect recovery followed in a few days. No toxic symptoms of any kind were produced. For children under one year, the quantity of bromine in the mixture should be reduced to 0.1 gramme; and for those from one to four years old, to 0.2 gramme.—*British Med. Journal*, Feb. 15, 1879.

The Pathological Anatomy of the Cardiac Ganglia.

The subject of the pathology of the cardiac ganglia as yet belongs to the domain of theoretical, rather than to that of practical pathology. Their disease affords so ready an explanation of many of the phenomena of cardiac disturbance, whether with or without organic disease of the heart, that it is often referred to, without consideration of the scantiness of our knowledge of the subject. Lanceraux described in 1864 a case in which a man who had suffered from angina pectoris, and had died in an attack, presented a morbid state of the cardiac plexus—vascularity, exudation, and accumulations of nuclei compressing the nerve-fibres. IWANOWSKY, in an important work published in 1876, has investigated the conditions of the cardiac ganglia in exanthematic typhus. The ganglia are chiefly embedded in the septum between the auricles, especially adjacent to the upper part of the fossa ovalis. They are of round or oval form, inclosed in a fibrillar connective tissue capsule, and surrounded by a dense network of vessels. The nerve-cells contained in them are round or oval, and surrounded by capsules, which consist of a layer of flat epithelial cells, each nerve-cell having one or two fine processes. The alterations found by Iwanowsky in typhus were a swollen and opaque state of the ganglion cells, indistinctness of their nuclei; the endothelial capsule was often swollen. In the intermediate tissue granulation-cells were met

with, and similar corpuscles were found between the nerve-cells and the endothelial capsule. Hence Iwanowsky concludes that the ganglia are the seat of a parenchymatous inflammation, which may account for the occasional fatal paralysis of the heart in the early stage of that disease. Wassilieff has described changes in the ganglia in hydrophobia very similar to those found by Iwanowsky in typhus, and he laid especial stress on the existence of spaces between the cells and its capsule, which are of very doubtful pathological significance. A further important contribution to our knowledge of the changes in the cardiac ganglia has been made by Dr. PUTJATIN, of St. Petersburg, who has examined the state of the ganglia in a considerable number of cases of chronic heart disease. In a case in which cardiac disturbance was observed during life, and the patient died from cardiac paralysis, with little obvious heart disease, the vessels of the ganglia were distended, and granulation-cells were scattered among the nerve elements; the latter were little changed. In cases of old organic heart disease more marked changes were found, consisting especially in the increase of the interstitial connective tissue between the ganglion-cells, in which fibres and round and oval granulation elements were met with. The nerve-cells were shrunken and more or less granular. In some cases the diminution in size of the cells was to one-half of the normal, and the epithelial capsule had almost disappeared. A somewhat similar change was found in a case of phthisis with atrophy of the muscular fibres of the heart.

From these cases Putjatin concludes that the changes in the ganglia are most marked when there exists recognizable disease of the heart and aorta. In several of the cases of organic disease of the heart in which changes in the ganglia were found the pathological evidences of constitutional syphilis were present elsewhere, and it is possible that the syphilitic infection may have had an influence on the production of the sclerosis of the ganglia. In some cases it is believed that the change in the ganglia is secondary to the change in the aorta; that an inflammatory process beginning in the aorta may pass through to the connective tissue beneath the pericardium, and later extend by continuity to the connective tissue around the ganglia.

It is pointed out by Putjatin that such changes must necessarily produce various disturbances in the action of the heart. Physiology teaches that the rhythmical action of the heart is regulated by the nerve-ganglia. Some form of angina pectoris, and many forms of irregular action, may be due to these changes. It seems to be probable, also, that acute changes in the ganglia may be the immediate cause of cardiac paralysis — *Lancet*, Feb. 8, 1879.

Diagnosis of Adhesion of the Pericardium.

In an article in the *Berliner Klinische Wochenschrift* for December 20, Dr. L. RIESS calls attention to a comparatively rare, and, as he believes, hitherto undescribed sign of adhesion of the pericardium, viz., the production of a metallic resonance of the heart's sounds (and of murmurs in disease of the valves) in the stomach. He relates three cases which have come under his observation in the Berlin General Hospital, in which the resonance was observed. In the first, a necropsy showed extensive adhesion of the pericardium over the diaphragm, as well as in other parts, there being, in fact, almost universal pericardial adhesion. The other two patients are still alive, and are the subjects of valvular disease; and in both there is resonance of the murmurs through the stomach. Commenting on the three cases, he remarks that the inconstancy of the phenomenon does not militate against the explanation he gives of it, viz., that it arises from the close approximation of the heart and stomach in consequence of the pericardial adhesion. In the first case the stomach was excessively distended; but this is not necessary for the production of the resonance, for in the other cases there was

only moderate distension, and the resonance was neither increased nor produced by artificial distension. He observes also that these cases show that the first sound of the heart or a systolic murmur may have a metallic resonance, while the diastolic sound does not manifest this character. Constancy of the sign is not to be expected; and one or more examinations may fail to detect it, although other symptoms of adhesion of the pericardium are present. When met with, however, it is a valuable aid in the diagnosis. Of course, the resonance produced by cavities in the lungs, and by pneumothorax or pneumopericardium, must be excluded.—*British Med. Journal*, Feb. 15, 1879.

Degenerative Changes in the Diaphragm as a Cause of Sudden Death.

Dr. F. W. ZAHN, in an article in Virchow's *Archiv*, Bd. lxxiii., ascribes certain cases of sudden death to structural changes in the muscular tissue of the diaphragm. These cases occur mostly in persons who have been for some time the subjects of emphysema, chronic bronchial catarrh, or slight disease of the muscular structure of the heart, and then die suddenly without any evident special complications. At the necropsy, there are found emphysema, moderate oedema, and hyperæmia of the lung, chronic catarrh of the bronchi, with more or less hypertrophy of the heart with some fatty degeneration; the remaining organs are generally sound, and the pathological conditions are apparently not sufficient to account for the sudden death. In a case of sudden death occurring in a person who was the subject of an advanced stage of emphysema, Dr. Zahn was led to examine the diaphragm, as there was nothing in the other organs that would sufficiently account for the death. The result was the discovery of an extensive fatty degeneration of the muscular tissue of the diaphragm, which was much thickened. He has since made a number of examinations, and finds that degenerative processes of three kinds occur in the diaphragm. 1. There may be simple brown atrophy with proliferation of cells and nuclei. In this case, which is the most frequent, the diaphragm is thinned and of a faintly brownish colour. Fatty tissue is found between the muscular fasciculi. 2. There may be granular opacity with fatty degeneration. Here the diaphragm has a yellow opaque appearance, and yellowish spots are sometimes seen. 3. In one case, Dr. Zahn found hyaloid degeneration of the muscle. This is very rare; and, when it affects the striated muscles, appears to be of traumatic origin. From his investigations, Dr. Zahn arrives at the following conclusions: In almost all cases, the disease of the diaphragm is of the same kind as that of the muscular tissue of the heart; and hence it may be correctly inferred that the disease in both arises from the same cause. Brown atrophy is brought about by marastic changes in the organism; fatty degeneration is in part the result of dyscrasic changes in the blood. Regarding the hypertrophy and consequent secondary degeneration of the muscular tissue of the diaphragm through increased exertion in consequence of impediments to or abnormal conditions of respiration and the pulmonary circulation, Dr. Zahn does not, for the present, arrive at any conclusion. He is, however, disposed to attribute the change in the muscle to a disturbance of nutrition, such as that produced by an excess of carbonic acid and a defect of oxygen in the blood. Where disease of the diaphragm is present, sudden death by asphyxia may occur even in very slight cases of bronchial catarrh.—*British Med. Journal*, Feb. 15, 1879.

Tubercle of the Alimentary Canal.

M. SPILLMANN, in a Thèse de Paris (*Gazette Méd. de Paris*, No. 2, 1879), says that there is nothing characteristic in the constitution of the tubercle similar

to what has been found in other affections, like cancerous nodules, gangrene, etc. It may be briefly described as a special inflammation, consisting in a nodular infiltration of perivascular connective tissue, originating from lymph-cells. It is always accompanied by fibrinous coagula in the vessels lying in the centre of the nodules, and by arrest of the circulation; in short, a granulation is an atrophic transparent cheesy mass. The most interesting variation of tuberculosis is that affecting the mouth and pharynx. It is characterized by yellowish or grayish raised spots, which later begin to ulcerate. It presents the so-called giant-cells, which M. Spillmann believes to originate from the alteration of muscular fibres encased in the tuberculous centres. Among the symptoms, M. Spillmann especially points out an unbearable lancinating pain, which often causes the patient to refuse nourishment, and may even drive him to commit suicide. The best means of relief are tincture of iodine, glycerine, and morphia, combined, and cauterization with a hot iron; but it is very doubtful whether complete recovery is possible. The extirpation of the parts attacked, so long as the disease has not spread to other organs, has been suggested. Tuberculous lesions in the digestive canal belong to several types. 1. They may be isolated, consisting of miliary centres situated either in the mucous membrane itself or beneath it, and after a time transformed into lenticular ulcerations. 2. They may follow the course of the vessels (annular type), having their superior part turned towards the intestines. 3. They may entirely cover Peyer's glands. In the large intestine, the tuberculization may be diffuse, and cause wide-spread, deep, rugged, or gangrenous lesions. While the tubercles of the stomach and intestines are very different from those of the buccal cavity, they present many points of resemblance, both clinical and anatomical, with the tubercles of the anus. It is not yet proved whether anal fistula ought to be considered as caused by tuberculosis of the digestive canal. M. Spillmann thinks that it has not yet been proved that tuberculous matter can develop tuberculosis, if introduced into the intestine. It is very remarkable, however, that, in a tuberculous individual, any organic lesion or irritation may produce tubercles.—*British Med. Journal*, Feb. 15, 1879.

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Complete Obstruction of the Intestine by Fibrinous Exudation.

Dr. MARKHAM SKERRITT (of Clifton) at a late meeting of the Clinical Society of London (*Med. Times and Gazette*, March 1, 1879) exhibited a specimen from a patient who had come under his care at the Bristol General Hospital. A young man, aged nineteen, previously in good health, on May 11 last felt slight abdominal pain, and was afterwards very sick; there were no febrile symptoms. Next day he suffered from vomiting and diarrhoea. After this vomiting continued, but there was no action of the bowels. On admission, a week after the onset of the attack, there were practically no acute symptoms, except frequent bilious vomiting. The skin was cool, the pulse 80°, large, regular, and rather soft, the tongue almost clean, the abdomen moderately distended, and almost free from pain and tenderness. An enema of three pints was given without difficulty, but with no result. Opium and hot fomentations were ordered. Next day some dulness in the flanks, changing with the patient's position, was noted. On the following day the patient sank rapidly and died. The temperature throughout was subnormal. At the post-mortem examination, the ileum, about a foot above the valve, was found to dip down into the pelvis so as to form a loop, which was much contracted, intensely inflamed on its peritoneal surface, solid to the feel, much like a firm umbilical cord; and its canal was here completely blocked by a solid fibrinous cast, four inches long, firmly attached to the mucous membrane, and tailing off at either end as a ragged coating of a part only of the inner wall of the intestine. This loop of gut bounded anteriorly an irregular cavity containing feces

and partially lined with false membrane, into which the vermiform appendix was found to open. No foreign body was discovered. There was no fluid in the peritoneal cavity. The two points raised by Dr. Markham Skerritt in commenting on this case were—(1) the pathological condition, and (2) the data for diagnosis. Inflammation marked by the formation of a fibrinous false membrane was met with in the intestine in various conditions; but no other case had been found on record in which the intestine was completely plugged with the exudation. It was probable that such a condition could occur only where the inflammation was so intense as to cause stasis of the feces, for otherwise the movements of the intestinal walls, and the flow of feces, would interfere with the continued deposit of the exudation; and hence in dysentery, where diarrhoea was marked, no very thick layer of false membrane was found. In this case, probably, ulceration of the vermiform appendix occurred first, followed by its perforation and extension of inflammation throughout the small intestine—slight at first, corresponding with the period of diarrhoea; and then more intense, causing cessation of peristaltic action, and consequent constipation. The inflammation took on the croupous type, and complete blocking of the intestine was the result. The absence of fluid from the peritoneal cavity was worthy of note; and the physical signs might be explained on the theory that each individual coil of intestine in contact with the flanks presented to the percussing fingers, in one position, a greater quantity of feces, in another, a large proportion of gas. As to the data for prognosis, the sudden onset of symptoms was in favour of the presence of one of the causes of acute intestinal obstruction. But the preliminary diarrhoea which preceded constipation accorded only with the history of enteritis simply, in which a mild inflammation accompanied by diarrhoea was succeeded by a more severe implication of the gut, causing cessation of peristaltic action and consequent constipation. But beyond this there was practically no positive evidence of enteritis, except bilious vomiting; all the other ordinary acute symptoms of this condition were absent. Notwithstanding this, a diagnosis of simple enteritis was made, founded upon an experience in which it had been the exception for acute abdominal inflammations to be accompanied by urgent symptoms. And yet this latency of symptoms was held to be of some positive value in diagnosis, as indicating the absence of any suddenly induced mechanical cause of obstruction, relievable, it might be, by timely operation. The following conclusions were derived from an experience which probably had been somewhat exceptional:—First, that an entire absence of acute symptoms might coexist with an intense local inflammation of the abdomen. Secondly, that if in a case of apparent intestinal obstruction urgent symptoms were in abeyance, it was in favour of the view that the condition was either non-acute, or, if acute, was not to be relieved by operation.

On the Effects of Diet, Rest, Exercise, etc., in Chronic Nephritis.

An able and interesting paper on this subject, by Drs. E. I. SPARKS and J. MITCHELL BRUCE, was read at a late meeting of the Royal Medical and Chirurgical Society (*Med. Times and Gazette*, Jan. 25, 1879), which has a real value as a contribution of carefully observed and recorded facts on points of treatment regarding which we are in need of increased reliable information. The authors showed the relations of the amounts of urine, albumen, and urea to each other in the patient on ordinary mixed diet and whilst taking ordinary exercise; and then gave the results of experiments with absolute milk diet, non-nitrogenous diet, excess of eggs, and nitrogenous diet with water, respectively, and also the effects of rest, of exercise, and of the administration of digitalis, upon the amount of albumen and of urea, and on the specific gravity

and the total amount of the urine. The principal conclusions arrived at are—that the amount of albumen was reduced by milk diet and by non-nitrogenous diet; that the effect of the milk diet was not merely due to the albumen being more than ordinarily diluted, for ordinary diet, with an equal amount of water, did not produce the same result; that the effect of non-nitrogenous diet was decided, was not immediately produced, and persisted some time after the re-ingestion of nitrogen; and that absolute rest markedly reduced the amount of albumen. The authors do not pretend to draw settled general conclusions from their experiments, to be applied universally in Bright's disease, but think that their observations indicate that certain factors beyond the disease-process had to be regarded in this case of albuminuria; these factors must be physiological facts which are still unknown, which evidently are related to the processes that occur between the digestive organs and the kidneys, and which, being physiological, must be taken into account in every case of albuminuria; and that diet and rest are of the greatest importance in the treatment of albuminuria. Much has been written lately on intermittent albuminuria, and the results obtained by the authors suggest that all cases of albuminuria not intermittent are probably remittent. They do not accept the explanation of the increase of albuminuria by exercise as always due to increased pressure; and their view on this point is supported by Dr. Quain's account of a case in which albumen was present largely in the urine after breakfast, and declined very greatly during the day. One of the most remarkable points about the paper is the fact that the great majority of the laborious and careful investigations were made by the patient himself, who is a medical man suffering from chronic phthisis, chronic heart-disease, and chronic nephritis—the urea, albumen, specific gravity, and total amount of the urine being estimated five times daily for weeks. Such an investigation, in such circumstances, shows wonderful courage, determination, and love of scientific truth and research.

Surgery.

Spontaneous Rupture of Muscles.

This case is recorded by SILBERSTEIN in the *Wiener Medizinische Presse*, December 1, 1878. The patient was a man aged 65, who for some months had suffered from muscular pain in his right arm, but this did not prevent him from following his occupation. On the 22d of October, he went into the stable to feed his horse. The animal being restive he raised his right arm towards its head; at the same moment he experienced a very severe pain in the arm, accompanied by a cracking noise and a feeling of faintness. He returned home thinking he had sustained a fracture: the faintness gradually passed off and the pain became less intense, but the right arm was then in a remarkably swollen condition. Its measurement, at its periphery, exceeded that of the left side by 8 centimetres (3.2 inches). The skin of the arm throughout looked as though it had been painted, the greater portion being red, but the two extremities were violet. The swelling was hard but not very painful, except at the point where the two heads of the biceps join together: however, every feature was intensified. Except when the elbow was flexed and the forearm pronated, movements did not give rise to much suffering. The patient could not lift up the smallest object. At a later date the swelling and discoloration spread down the forearm to the right carpus; this disappeared in time, but the stiffness and limitation to flexion still remained.—*Lond. Med. Record*, February 15, 1879.

Use of Opera-Glasses in connection with the various forms of Ametropia.

The use of opera-glasses is often attended with very great inconvenience as regards vision; and this is due, according to Dr. GIRAUD-TEULON (*L'Œil*, deuxième édition, 1878), to the indifference displayed in their fabrication, with reference to the great variety of refractive power in the eyes of those who use these instruments. When the optic axes are parallel, as when the eyes are directed to any distant object, binocular vision results without effort, the accommodation of the two eyes being perfectly relaxed; and if the tubes of the opera-glasses be distant from each other by the same space which separates the pupils, the conditions of ordinary vision are realized; but if the distance between the tubes vary, either more or less, then double images are produced, homonymous if the distance between the tubes be greater than that between the pupils, and crossed if the distance be less. Now, the eyes have greater difficulty in uniting homonymous images which are separated by a slight interval than is the case with crossed images; it is extremely important, therefore, to use opera-glasses the tubes of which exactly correspond to the distance between the eyes. Glasses which are too wide should be carefully avoided.

In myopia, the optic axes have a tendency to diverge, and distant objects give rise to images which are slightly crossed; and, in such a case, the ocular lenses should be rather more distant from each other than the object lenses; that is to say, they should be capable of being shifted laterally, and from within outwards.

With hypermetropia the reverse is the case; the ocular lenses should be nearer to each other than the object lenses; i. e., they should be capable of lateral movement from without inwards.

Dr. Giraud-Teulon believes that, if opera-glasses were constructed so that the ocular lenses were capable of lateral movement, very many people who are now unable to use them would be able to do so, and without fatigue or inconvenience of any kind.—*London Med. Record*, Aug. 15, 1878.

Gunshot Wounds Involving several Viscera.

This is a very careful record (*Progrès Méd.*, January 4, 1879) of a case of gunshot injury, well worthy of perusal *in extenso*, although we are unable to do more than briefly abstract it here. An Arab, aged 30, was shot with a pistol containing two balls, on August 9, 1878. Both of these entered in the neighbourhood of the xiphoid cartilage of the sternum; neither emerged anywhere. One aperture in the middle line about a finger breadth above tip of xiphoid, the second more to the left and a little lower down. On entry into hospital, great collapse, but no other symptoms of injury; no vomiting or expectoration of blood. Heart carried towards the right side; sounds feeble, but perfectly normal. Respiration almost normal, feeble behind. Both wounds covered with collodium, as also the whole surface of the abdomen. Liquid diet: draughts of chloral and morphia repeated in small quantities. Before entry he had vomited, but the ejecta contained no blood.

To be brief, the patient developed, in the course of a few days, well-marked pericarditis, and later still, empyema on left side, but no abdominal symptoms. On the sixth day thorax tapped, and 150 grammes of pus withdrawn; again, on thirteenth day, 800 grammes; again, on fourteenth day, 900 grammes. After remaining in a very grave condition for some weeks, he gradually recovered, and at last left the hospital, contrary to physician's wishes, about nine weeks after the accident. He was urged not to leave, as he still showed dulness over the left lower chest posteriorly with *râles* and evening pyrexia, but his heart was normal,

as also the functions of all abdominal organs, and he felt very well. He returned consequently to his business, remaining at home for nearly a month. During this time, his temperature rose each evening, and he had occasional shiverings. Re-entered hospital on November 20, with symptoms of pyæmic and hepatic abscesses, and died on the 25th (108 days after injury), with symptoms of peritonitis, in addition to those already mentioned.

Autopsy.—The cause of death was shown clearly to be pyæmia manifesting itself chiefly in metastatic abscesses in liver and peritonitis; but the interest of the examination of the body lies mainly in the course of the bullets. On removing the skin, etc., the mark of one of the latter is found on the costal cartilage. The second has left no visible mark here. The pericardium is found adherent to the heart in many places, the surface of which latter is covered with villous exudation. On the posterior aspect of the pericardium is an oval, punched-out opening, hardly covered with a light film of exudation; it is 1 centimetre long and 4 millimetres broad. Opposite this opening there is a long groove torn through the muscular substance of the left ventricle of the heart, commencing at the apex, and running from below upwards, and from left to right, but without opening the ventricle at any spot. This groove is cicatrized and marked with the same villousities as the heart. From this the ball has passed on to lodge in the left lung, which is, however, quite sound anteriorly. Behind the lung is an encysted pyæmia, containing 800 grammes of pus, in which the first bullet is found. No trace of the second bullet is found on inner surface of the abdominal walls or on either surface of the left lobe of liver. But on the anterior wall of the stomach there is a small, dark-coloured, wrinkled, and depressed scar, 4 millimetres in diameter. There is no aperture of exit marked on the posterior wall of the stomach, but on turning the latter over to the right side the second small bullet is found encysted above the pancreas, and lying upon the aorta. A line uniting its position here with the external scar, and that on the front wall of the stomach, passes through the left lobe of the liver and both walls of the latter, and yet only one scar is found in it, and none in the liver. Of the histological appearances of this scar, which are given in detail, we need only notice that many cotton fibres were found imbedded in the fibrous tissue of which the latter was composed. That the patient should have recovered from such very severe injuries is the most remarkable point of the case, the pyæmia being secondary to the empyæma.—*Lond. Med. Record*, February 15, 1879.

On Colotomy.

Dr. F. VAN ERCKELEN, of Aix-la-Chapelle, in a contribution to a recent number of the *Archiv für Klinische Chirurgie*, Band xxiii. Heft 1, presents an analysis of 262 cases of colotomy, and discusses the comparative merits of the two principal operations; that proposed by Littré in 1710, and first performed by Pillore of Rouen in 1776, and that proposed by Callisen in 1778 and carried into practice sixty years later by Amussat. The latter operation has been most favoured, indeed almost exclusively adopted, by English and American surgeons, whilst most instances of Littré's operation have occurred in Germany and France. Very many of the cases tabulated by the author have been collected from papers published by Hawkins and Curling in this country, and many also from the valuable article on colotomy written by Dr. Erskine Mason, of New York (*American Journal of Medical Sciences*, vol. lxvi. 1873). Most of the results from the analysis could be based on not more than 249 of these collected cases, since in thirteen no mention could be found as to the kind of operation that has been performed.

In this slightly reduced number the proportion of cases in which the operation proved successful or was not, directly or indirectly, the cause of death, is 58.4 per cent. The numbers of successful and fatal cases being 165 and 84. This percentage cannot be regarded as high, and compares unfavourably when compared with that of ovariectomy, which in itself is a much more serious operation. Colotomy, however, is usually performed for the purpose of preventing death in extreme cases, and on subjects who have suffered long from some very protracted disease. The most unfavourable results are presented by the cases in which the operation was performed on infants with congenital atresia recti. Of 44 cases of this kind not more than 20 (45.2 per cent.) were successful. In the recorded cases of colotomy for the relief of intestinal carcinoma the percentage is higher, being 59.2. The chances of a successful result are much greater when the operation is performed in cases where the disease is not so serious as to impair to any extreme degree the strength of the patient or to threaten life. Of the 16 cases in which the colon was opened for the treatment of fistula, 13 (81.2 per cent.) were unsuccessful. In very few of the fatal cases in the tables, the author asserts, could death be fairly regarded as the direct result of the operation. The above results prove, it is held, the propriety of colotomy in those cases where the operation is usually resorted to. When performed as an almost desperate measure, and for the purpose of saving life, it is successful in more than half the number of cases, and the percentage of recoveries from the operation in instances of less severe disease is far more favourable.

The question as to which of the two operations, that of Littré and that of Amussat, is to be preferred, has often been discussed. In dealing with this, the author considers the date afforded by his table of cases; the special dangers of each operation, the difficulties in the performance of each, and the advantages and disadvantages attending the situation of the artificial anus. According to the tabulated cases the proportion of deaths is much higher after Littré's than after Amussat's, being 46.4 per cent. with the former, and 38.4 per cent. with the latter. But, as Dr. van Eeckelens points out, Littré's operation is usually performed under less favourable conditions and in more desperate cases than those in which recourse is taken to the method of Amussat. In a large proportion of the cases of atresia recti the colon was opened in the groin. In cases of fistula, on the other hand, colotomy is actually performed in the lumbar region. When performed under equally favourable conditions the difference in the results does not appear to be so very great. The author's tables show that in cases of carcinoma the percentage of recoveries is 63 after Amussat's and 61 after Littré's operation, and in cases of non-malignant obstruction, 50 after the former, and as high as 58.5 after the latter. It would seem, then, that the operation of Littré, notwithstanding the necessity it involves of opening the peritoneal sac, is not more dangerous than that of Amussat. According to Dr. Mason, who has operated only by Amussat's method, "wounds of the peritoneum are not now held in such dread by surgeons as formerly, as our means of combating peritoneal inflammation are much more efficacious, and the portion of membrane wounded has often lost its peculiar physiological properties and its pathological tendencies before any injury with the knife." Pure traumatic peritonitis is not a frequent cause of death after Littré's operation. In not one of six fatal cases reported by Holmes was death directly the result of this operation. In some cases, those of atresia recti in infants, fatal peritonitis may have been previously excited by punctures and incisions made from the perineum. In one method of colotomy, as in the other, a fatal result may almost always be attributed to the disease, and not to the interference of the surgeon. The operation gives relief to the distended intestine, but unfortunately in too many cases merely retards the development of peri-

tonitis consequent on prolonged obstruction. The wound, according to Dr. van Erckelens, heals more favourably after Littré's than in Amussat's operation. Erysipelas and diffused suppuration occur frequently after each method, and were met with in about half the number of tabulated cases in which Amussat's operation had been performed, but whilst fourteen of these were fatal, in four only did death occur after the method of Littré. The diffused suppuration after colotomy is very probably due to the prolonged contact of fecal matter with fresh or non-granulating surfaces, and, if this be so, is more favoured by the conditions of Amussat's operation.

Littré's operation is a comparatively easy one, and does not require more skill and experience on the part of the operator than are necessary for the performance of any major surgical proceeding. There is but a thin layer of muscular structure to cut through, and there need not be any great extent of wound either in length or depth. Amussat's, on the other hand, is a difficult operation. The intestine is deeply seated, and cannot often be easily found. The wound is wide and deep, and the recognition and suitable division of the different layers of fascia and muscle require much anatomical knowledge. Most surgeons who have frequently performed Amussat's operation have met with difficulties, especially in finding and recognizing the colon. Amussat himself, in one of his operations, experienced much anxiety and uncertainty. In another case the operation, this surgeon stated, was long and difficult, and in a third he mistook the kidney for the descending colon, and wounded this organ.

Dr. van Erckelens, in concluding his paper, argues that the groin is a much less inconvenient structure for an artificial anus than the lumbar region.—*London Med. Record*, Jan. 15, 1879.

Stricture of the Rectum caused by Prolapsus.

M. LANNELONGUE (*Société de Chirurgie*, December 11, 1878) called attention to some facts which might throw light upon the pathogenesis of some strictures of the rectum, situated about $6\frac{1}{2}$ centimetres above the anal orifice, forming a kind of annular valve, with the free border supple, but its adhering border resting on a somewhat indurated base. A child was brought under his notice with prolapsus of the rectum, and some inflammation of the mucous membrane of the protruding gut. Many months afterwards the child returned with a bridle cicatrix on the posterior wall of the rectum, partially obliterating the lumen of the intestine.

Another child had been brought to him in a similar condition. The case had been watched. An examination made later on revealed an ulcerated surface; this granulated, and gradually formed a valvular stricture. In adult patients, where stricture exists from an unknown cause, inquiry should be made as to the existence in infancy of rectal prolapse.—*Lond. Med. Record*, Feb. 15, 1879.

Lineal Rectotomy for the Extraction of a Foreign Body.

This communication was made by M. TURGIS at a meeting of the *Société de Chirurgie*, December 11, 1878.

The patient had introduced into the rectum a chocolate cup. The efforts made at extraction soon after the introduction of the foreign body caused a small piece to be broken off the edge of the cup, the remainder passing higher up the intestine. M. Turgis saw the case on the fourth day. Deeming further attempts at extraction to be useless, a curved trocar was inserted into the anal orifice and brought out 5 or 6 millimetres above the tip of the coccyx, and on the left side of the bone. An *écraseur* was then introduced, and the section completed without

a single drop of blood being lost. By these means the cup was easily seized and withdrawn. The after-results of the operation were satisfactory, and the patient recovered in spite of the large quantity of blood he had previously lost, of a wound of the prostate, and a tear of the rectum. M. Turgis thought this mode of extraction preferable to the breaking up of the foreign body.

M. Verneuil stated that Dr. Raffy had performed linear rectotomy in 1860. The sphincter was divided with a bistoury, and it was then found to be easy to manœuvre in the rectum. M. Turgis's case was interesting, for an operation had been performed which, though but slight in itself, had rendered very great service; for it should not be forgotten that the mortality caused by the introduction of foreign bodies into the rectum was 20 per cent.—*Lond. Med. Record*, Feb. 15, 1879.

Recovery after Operation for Relief of Acute Intestinal Obstruction by the Establishment of a False Anus in the Linea Alba.

At a later meeting of the Clinical Society of London (*Med. Times and Gaz.*, March 1, 1879), Mr. HOWARD MARSH read a paper describing a case of acute intestinal obstruction in which the abdomen was opened, a stricture of the sigmoid flexure found, and a false anus established in the linea alba, the patient recovering. A woman of forty had, on her admission into St. Bartholomew's Hospital, under Dr. Marsh, on October 15, been suffering from acute intestinal obstruction, with frequent sickness and abdominal distension for eight days. She had previously considered herself well, and had experienced no trouble in the action of her bowels. No hernia, intussusception, or other causes of obstruction could be detected. The colon, which was distended, could be traced through the umbilical and left lumbar regions. The patient on her admission was found to be in a very exhausted condition, with a feeble pulse of 120, and a relaxed and clammy skin. During a consultation on the case, some of the hospital staff advised that, since the colon could be felt to be distended, colotomy should be performed. Others, believing that the sudden manner in which the symptoms of acute obstruction had come on in a person who had apparently been previously healthy, indicated some form of internal strangulation, which if unrelieved might lead to gangrene of the intestine, recommended that the abdominal cavity should be explored. The latter operation was at once performed. An incision was made below the umbilicus in the linea alba, and the intestine—starting with the coil which presented in the wound—was traced towards the left iliac fossæ, each successive piece of the gut being returned as soon as it had been examined, and before another loop was drawn out. While this was being done a stricture of malignant character was detected in the middle of the sigmoid flexure. The intestine just above the stricture was fastened by numerous closely placed sutures to the wound in the linea alba, and a false anus was established in this situation. The operation was found to be very easy, and was speedily completed. The patient made a good recovery, and left the hospital at the end of about two months. In his remarks Mr. Marsh very strongly insisted on the importance of operating in cases of abdominal obstruction—where the diagnosis can be established—before peritonitis and other local changes have ensued. He alluded to the large percentage of cases of ovariectomy in which the abdominal cavity is safely opened; and asked whether it could be more dangerous to open the abdomen, and divide a constricting band, or release an internal strangulation, than it was to remove a large tumour, which was, perhaps, extensively adherent to the omentum, the intestines, or the uterus? He believed a great future was in store for the surgical treatment of intestinal obstruction; and that the operation, if performed early, and with due care, and in cases

in which a clear diagnosis could be made, would prove at least as successful as ovariectomy.

Mr. BRYANT had not quite understood how far the symptoms were those of acute rather than of chronic stoppage; but he believed that from the history he should have been inclined to advocate colotomy, though it was always difficult to judge of this without being in presence of the patient. He entirely indorsed Mr. Marsh's observation as to the desirability of early operations in these cases.

Mr. BARWELL thought that he also would have voted in favour of colotomy, which would have involved less risk than the operation performed on the successful result of which he congratulated Mr. Marsh. He, like Mr. Bryant, was strongly in favour of an early operation.

Mr. GOULD asked Mr. Marsh whether he thought it would have been profitable to have removed the intestine, having regard to its limited extent.

Mr. MARSH replied that the reason the abdomen was opened was, first, that the symptoms were acute; secondly, that no history of previous trouble could be obtained; thirdly, that the nature of the obstruction was obscure. He allowed that he himself had inclined towards colotomy, though there had been no symptoms of malignant stricture. The anterior position of the artificial anus was, he thought, an advantage rather than the opposite. It was more manageable and more easily attended to by the patient. He had not considered it advisable, seeing the exhausted state of the patient, to expose her to the risk of prolonging the operation by removing the diseased intestine by Billroth's method, though in a suitable case he should undoubtedly do so.

Treatment of Strangulated Hernia by Ergotine.

Dr. PLANAT, of Nice, has treated successfully two cases of strangulated hernia with ergot.

The first patient was a man, aged fifty, who suffered from a hernia which had been strangulated on the previous day. Ergot was applied both internally and externally, in the form of ointment, which was rubbed on the tumour every two hours, the latter having been previously washed with warm alkaline water. The internal treatment consisted of 5 grammes of ergot, mixed with 125 grammes of water and syrup, taken every hour. After this treatment had lasted for four or five hours, the vomiting ceased, and twelve hours later the hernia had become spontaneously reduced.

The second case was that of a young man, aged 28, who had worn a truss for several years before the hernial complication set in. The hernia had resisted all efforts to reduce it. Fifteen leeches had been applied to the tumour, but six only took; the symptoms then grew worse, and ergotin was again resorted to, being administered as above. Eleven hours later, when the surgeons arrived to perform the operation, in case the ergot should have proved unsuccessful, the hernia was reduced, and the patient was well. The author suggests whether the drug would not be perhaps more efficient if directly injected into the hernial sac, and not taken internally.—*London Med. Record*, Feb. 15, 1879.

Lithotrity at one or more sittings.

Sir HENRY THOMPSON recently delivered, at University College Hospital (*Lancet*, Feb. 1, 1879), a lecture in which he considered Dr. Bigelow's operation for the removal of a stone by crushing at a single sitting (*American Journal of the Medical Sciences*, Jan. 1878). He said that invariable conformity to the proposed rule to remove at one sitting an entire stone, no matter how large it may be, or what may be the condition of the patient, he did not hesitate at the

outset to say, will lead to results which, although often successful, will not seldom be disastrous. Sir Henry said:—

“I have never doubted for an instant that, so far as mechanical power is concerned, almost any stone may be thus removed, and without much difficulty, but I cannot overlook the fact that the vital conditions under which we are compelled to work must limit the employment of mechanical force. In the practice of Bigelow's method, very large and heavy lithotrites are introduced, certainly larger than an ordinary urethra will admit without using force. But what strikes me after all as the most remarkable fact, judging from the very slender experience by which the proceeding is at present supported, is the enormous time which has been consumed with these instruments in performing the task proposed. Thus we find in Bigelow's work that the duration of a single sitting to remove a stone of less than two drachms was an hour, and for one of less than three drachms an hour and a half! Now, as already stated, the utmost time I ever devote to such stones, and with my small light instruments, amounts to twelve or eighteen minutes, but in two or three sittings of five or six minutes each, all comprised within a period of seven to ten days.

“But I am free to confess that the proposal to remove a large hard stone at one sitting is an attractive one. So far from opposing it, I am predisposed to regard favourably any plan by which we may hope to take away, once and for all, the hard and angular fragments which must remain, and sometimes to a considerable extent, after an incompleting sitting. I fully agree with Bigelow that their presence constitutes the chief source of mischief in lithotomy as mostly practised. I only fear whether we may not, *by adopting the system under consideration*, pay too high a price for the purpose of attaining the end proposed. And, in reference to this, I am bound to say that my own system has for a long time past been gradually inclining to the practice of crushing more calculus at a sitting and removing more debris by the aspirator than I formerly did. Thus I have, during two years at least, been in the habit of using in every case two lithotrites alternately (my comparatively small, but strong, flat-bladed instruments); handling the first, when withdrawn, full of debris, to my assistant, who clears it out completely while I am crushing with the other, which in its turn is cleared and again used. Each is probably introduced three times at least, while clogging of the blades with debris is prevented by the clearing process. With these light and handy instruments, which pass with the utmost facility, employed in this manner, and followed by the aspirator, I am quite certain that I can remove calculous matter from the bladder more safely and much more rapidly than with the enormous and unwieldy instruments referred to.

“I have, moreover, taken a hint from Bigelow's aspirator, and, slightly modifying Mr. Clover's original instrument, have, I think, rendered the latter more powerful and perfect, while I have avoided some material disadvantages attaching to the former. The new one, in fact, combines the best qualities of both. Thus I have greatly shortened the channel between the bladder and the aspirator, by getting rid altogether of the long arched tube which enters the top of the American instrument, and making the end of the evacuating catheter enter directly, without curve, at the bottom; so saving many inches of the route which has to be traversed by fragments. The new instrument is very easily filled with water, its action is extremely powerful, no air can possibly enter during the process of using it, and the amount of debris withdrawn is at once taken out of the current, and remains undisturbed and visible to the operator throughout the proceeding. I am quite satisfied with evacuating catheters No. 16 in size, English scale (No. 26, French); larger than those are mostly dangerous and wholly un-

necessary. There should be several of them, with openings and curves of different kinds, one variety acting better for one patient and another for another.

"But there is a direction for the successful use of the aspirator which Bigelow in his detailed instructions regarding that matter has not alluded to. And I do not hesitate to say that the recognition of the fact I refer to is not less important than all the information which can be obtained by observing the action of the aspirator-currents on fragments in an artificial bag, or even in a human bladder after death, useful to a certain extent as I admit that to be.

"I contend that a very important rule in employing any aspirator, in order to insure the minimum of risk with the maximum of efficiency, is strictly to subordinate its action to the respiratory movements of the patient, especially when these are full and deep, as they are apt to be sometimes under the influence of ether. When the respiration is light and tranquil, the rule is less important. Whatever the position in which you may place your instrument, for effective use it is desirable to make the exit of the fluid from the bladder coincide with the act of inspiration by the patient, since the effect of a full expansion of the lungs is as powerful to remove débris from the bladder as is the exhausting force of the India-rubber ball itself. In illustration, how often has one observed, when an open silver catheter is lying in the bladder of a supine patient, that a jet of urine is propelled to a considerable distance by a full act of inspiration. In using the aspirator, then, I let every movement of the hand holding the India-rubber ball conform to the action of respiration, filling the bladder with the patient's expiration, and gaining the force of his inspiratory effort by simultaneously permitting the expansion of the exhausting ball. Indeed, it is only safe (under ether) to inject the bladder during expiration, while the aspirator is only continuously productive during inspiration. By practice the hand of the operator and the respiratory efforts of the patient work together so harmoniously that, as with myself from long habit, it becomes almost impossible for them to act otherwise. It may be as well to add that the short quick act of expiration which constitutes "cough" is, on the contrary, a powerful expelling agent, and when it occurs, as it not unfrequently does under ether, should always be associated with relaxed grasp on the aspirator, and consequent outflowing current.

"Since writing the above, I removed, on Jan. 21, 1879, a hard uric acid calculus, in a sitting of eight minutes, with the two light lithotrites, in the manner described above, and with the aspirator, the débris weighing, when dried, two drachms—a weight exceeding that of the calculus reported by Bigelow as occupying one hour for its removal with his instruments. The patient, aged sixty-nine years, was brought to me by Mr. Luthbury, of Finsbury, who was present, as were also Mr. Clover, who gave ether, and two other medical men. The bladder was entirely cleared; scarcely any blood was seen; no fever followed, and the patient is doing extremely well. I regard this example as an admirable illustration of the capability of the existing lithotrites and of the existing method; the application of the latter, I am ready to confess, having been extended in point of time beyond the limit which I formerly considered prudent or practicable, and which I still consider to be so only in tolerably practised hands."

At a late meeting of the New York Pathological Society (*Med. Record*, March 15, 1879), Dr. KEYES exhibited four vesical calculi which he had removed by Bigelow's method, and he stated that he had now performed thirteen operations by this method, and it seemed to him that each additional operation, each increase of experience in its performance was an argument in favour of the method. He had not had a fatal case, and believed that Bigelow's method would be the one which would supersede all others for the removal of vesical calculi. In conclusion he called attention to the fact that difficulty was sometimes experienced in

removing air from the bladder when it had been accidentally introduced from the wash-bottle. He had accidentally discovered that by turning the bottle upside down the water rushed in, displaced the air at once, and the latter appeared at the bottom (now top) of the bottle above the water. The bottle then had to be refilled before washing was recommenced.

One advantage to be derived from the use of Bigelow's admirable washing-bottle was stated to be the facility with which the existence of small fragments of stone in the bladder could be detected during the washing by combining auscultation with the washing. The sharp click of the little fragments against the catheter as the water rushed in and out was very distinct. Dr. Keyes had used this method in place of ordinary sounding where a very small stone was suspected. He did not believe the necessity for using very large tubes existed. He had never used any tube larger than 30 French, the average being 27 French, 18 American scale. In over one-fourth of the cases there was no disturbance whatever following the operation, not even a chill. The average duration was three-fourths of an hour. Some patients had been subjected to it who would have died had they been operated upon by the usual methods.

Orchitis in Typhoid Fever.

Dr. V. HANOT (*Archives Générales de Médecine*, November, 1878, p. 595) gives an account of a case of orchitis, which occurred during the course of an attack of typhoid in a patient under the care of Dr. Lasègue, in La Pitié Hospital.

The man, æt. 21, was admitted on August 19, 1878, suffering from typhoid. On August 25th (the sixteenth day of the fever) the patient complained of violent pain in the right groin and testicle, which had come on during the preceding night, and had prevented sleep. On examination, the scrotum was seen to be slightly tense and reddened; the right testis somewhat swollen, harder than the left, and painful on pressure; the epididymis was intact and painless, and the cord unaffected. There was no fluid in the tunica vaginalis. None of the ordinary causes of orchitis could be made out. On August 26th the testis was as before, but the pain was less. On the 27th the testis had slightly diminished in size, and the scrotum had become normal. On September 3d all traces of the orchitis had disappeared. On the 14th the patient was convalescent from typhoid fever, but the right testis had manifestly decreased in volume.

Some particulars of three other cases of affection of the testis and epididymis during typhoid are also given by Dr. Hanot. These cases occurred in the Hôpital Cochin, under the care of Dr. Bucquoy, in 1872 and 1873.—*London Med. Record*, Dec. 15, 1878.

Causes and Treatment of Phagedæna.

In the *Presse Médicale Belge*, Nov. 10, 1878, Professor THIRY's views on chancreous phagedæna are referred to in connection with the report of a case lately under his care in the Hôpital Saint-Pierre. Thiry considers that phagedæna is not due to any particular constitutional state, nor is it related to gangrene. It is purely local, and results from increased activity of the virus accidentally set up during the evolutions of the sore. This increased activity is, according to Thiry, due to one or other of the following three causes, viz., 1. More or less intense inflammation of the base and periphery of the chancre; 2. Exaggerative sensibility of the chancre; 3. A torpid state of, or want of vitality in, the chancre. The varieties of phagedæna are accordingly arranged as follows: 1. Phagedæna from excess of inflammation; 2. Phagedæna from excess of sensibility; 3. Torpid or atonic phagedæna. The gravity of the

case will depend upon the extent to which either of the three causes is in operation.

The treatment recommended differs somewhat according to the nature of the sore. While methodical cauterization is necessary in all, the subsequent dressing in the first form should consist in soothing fomentations and regular compression; in the second, or irritable variety, preparations of opium or morphine should be applied, combined with gentle pressure; in the third, or atonic form, a solution of tartrate of iron is most useful.

As a caustic, Thiry speaks very highly of an ointment compound of 2 grammes (30 grains) of cyanide of mercury to 10 grammes (150 grains) of lard.

A male, aged 25, was admitted into Saint-Pierre on June 17, 1878, with a spreading phagedenic chancre of the atonic variety. The sore had been in existence for four months; it commenced at the frænum, and on admission had perforated and almost wholly destroyed the prepuce. There was no syphilitic induration. The treatment consisted in deep cauterization of the whole ulcer on eight consecutive days, and the application of a solution of tartrate of iron four times daily. The penis was bandaged and kept up on the abdomen. After eight days, the aspect of the ulcer was almost that of a simple sore. The healing process soon became general, and the patient was discharged from the hospital cured, at the end of July.—*London Med. Record*, Dec. 15, 1878.

Distal Deligation of the Carotid and Subclavian Arteries for Innominate Aneurism.

At a late meeting of the Royal Medical and Chirurgical Society (*Lancet*, Dec. 14, 1878) Mr. BARWELL read a paper on three cases of distal deligation of the carotid and subclavian arteries for innominate aneurism, of which the following is an abstract:—

After referring to a case of innominate aneurism which he had successfully treated by double distal deligation, and which is published in the Transactions of the present year, the author related the case of J. B., a man aged forty-eight, who died from the effects of the anæsthetics thirty hours after the operation. The parts, showing very large aorto-innominate aneurism, were exhibited. The operation was performed on Dec. 6, 1877. On that day Mr. Barwell also tied the same vessels for Laura G., aged thirty-seven, who had a pulsating aneurismal tumour perforating the upper anterior wall of the chest on the right side, and also above the clavicle. Except for the aneurism, the patient appeared healthy, but extremely nervous and excitable. After the operation no brain symptoms were developed nor any pyrexia, but her progress was fluctuating, the variations appearing to be in part connected with the catamenial period, in part with her mental condition. The patient left the hospital in July, having no tumour, though pulsation from the solidified aneurism communicated by the aorta could still be felt. On January 10, 1878, Mr. Barwell tied the same vessels for Catherine H., aged twenty-seven, who had a visible pulsating tumour, about the size of a small walnut, above and a little outside the sterno-clavicular joint, and also intra-thoracic aneurism. This patient, rather feeble and extremely nervous, also made a fluctuating recovery. She had no cerebral symptoms and no pyrexia. She left the hospital on July 22, a tumour remaining in the above situation, and though probably not quite, yet is nearly (Mr. Barwell believes) solid. The cough and dyspnoea, from which she had previously suffered, have quite disappeared. After some remarks concerning the excitability of the vaso-motor system, which in these patients always accompanied the menstrual period, the author gave his views concerning the use of catgut as a ligature, and stated his belief that

with such material it is advisable to tie the vessels with very moderate force, so as not to divide the middle coat. He attributes his success to this mode of tying. The statistics of these operations are as follows: Including the subjects of the present paper eleven cases in all have been thus treated; of these eight have been unsuccessful, all of them dying at various periods from the effects either of the aneurism or of the operation. The case Mr. Barwell recorded last year and the two now related constitute the three successful ones.

Mr. CHRISTOPHER HEATH said he believed the case upon which he operated in 1865 was the first—at any rate, within recent times—in which double distal ligature was practised. Mr. Barwell was right in not including it in his list of cases, for although thought to involve the innominate artery at the time of operation, when, four years subsequently, the post-mortem examination was made the aneurism was found to be wholly aortic. At the same time it was a perfectly successful case, the patient's death being due to his intemperate habits, the aneurism bursting externally. (The preparation is in the museum of the College of Surgeons.) So much did that case resemble the case of the older of the two female patients shown by Mr. Barwell that Mr. Heath ventured to predict that in her case also the aneurism was mainly, if not entirely, aortic, and not innominate. The sphygmographic tracing did not show the characters of an innominate aneurism, and he believed that vessel was but slightly, if at all, involved. He had seen the case before operation, and would testify to the great benefit received by it, the chest having notably sunk in. In the other case the persistence of pulsation below the seat of ligature in the carotid was remarkable and difficult of explanation, but here also much benefit seemed to have been derived. Speaking of the catgut ligature, Mr. Heath could not think it possible, in an operation of such magnitude, to regulate the force with which it should be tied to the nicety insisted on by Mr. Barwell. Indeed, he thought it better that the coats should be divided than that the risk of imperfect ligature should be run; and in a case he brought before the Clinical Society last year, where a second ligature had to be applied, owing to the failure of the first, he believed this failure was due to the fact that he had not pulled the ligature tight enough. He held to the hempen ligature as being more secure and more likely to divide the coats of the vessel efficiently.

Mr. HOLMES agreed with Mr. Heath as to the difficulty in diagnosing between innominate and aortic aneurism. The only case in which he had performed the distal ligature with satisfactory results was one of aortic aneurism, beyond the innominate, in which he tied the left carotid. The patient's condition before operation was most critical, but the result of the treatment was that now—five years after—she is in health and pursuing her work. (The case is to be found in the Clinical Society's Transactions, vol. ix. p. 114, and vol. x. p. 97.) He could not see how ligature of the subclavian could do good, for if, when tied in the third part, the vessel became occluded, how was the circulation carried on in the limb? Such complete occlusion did appear to have taken place in Mr. Barwell's first case read before the Society a year ago, but still the difficulty remained to account for the collateral supply. In the two cases shown that evening it was evident that a great part of the subclavian was pervious, for the circulation was well carried on in the limb. Indeed, *a priori*, he would think that the circulation would even be increased in the unobliterated part of the vessel. There is in the museum of St. George's Hospital an instructive preparation of the spontaneous cure of an aortic aneurism. The patient was a sailor, and the aneurism was a large one. He was attacked with hemiplegia, and from that time the aneurism began to consolidate, so that when he died (from some intercurrent disease), some years after, the carotid was found entirely blocked, but a small channel was left through the aneu-

rism by which the subclavian circulation had been kept up. Believing, then, that, save under very exceptional circumstances, the circulation through the subclavian must go on, he could not but regard ligature of that vessel as a hindrance rather than a help to the formation of clot in the sac. The best plan would be ligature of the carotid artery only, the coagulation extending downwards from that vessel into the aneurism. One of Mr. Barwell's cases presented pulsation above the clavicle, as if the carotid had not been completely plugged; but possibly, as Mr. Barwell suggested, this pulsation was transmitted from below. He agreed with Mr. Heath that a catgut ligature should be tied as tightly as a hempen one, there being more risk from tying it loosely than from division of both the inner and middle coats, and a case he had recorded showed that the catgut remains on the artery for some time after its application. Cases had occurred where, after the vessel had been tied with catgut, the circulation had been re-established, and in such cases possibly the ligature had been tied less lightly than habitually. He congratulated Mr. Barwell upon his success, and thought his cases would give a great impetus to the operation of distal ligature.—Mr. HEATH pointed out that Mr. Holmes's case entered into a different category from those under consideration, for in that case the ligature was applied to the *left* carotid.—Mr. HOLMES said although the cases were different the process of cure was the same—viz., extension of coagulation from the obliterated carotid into the aneurism from which the artery springs.

Mr. KELBURNE KING (Hull) said his reason for tying both vessels in his case, which had been referred to by Mr. Barwell (see *THE LANCET*, vol. i. 1878, p. 823), was that the pulsation in both carotid and subclavian was very strong, and he did not think ligature of the carotid alone could possibly be enough. The patient survived one hundred and eleven days, and the large aneurism (aortic and innominate) was found filled with coagulum, which extended into the subclavian as far as the seat of ligature. He believed that for a time the collateral circulation was carried on through the subclavian branches, and that the clot extended into the trunk of the vessel at some period subsequent to the ligature. If he had to do the same operation again, he could not with any satisfaction apply the ligature to one vessel without also applying it to the other.

Mr. BARWELL, in reply, said that the persistence of pulsation below the seat of ligature on the carotid in the younger patient had been a source of anxiety to him; but he thought it possibly due to the presence of a channel of blood behind the main clot in the sac, and he had little doubt that it would eventually consolidate. He would keep the case in view. Mr. Heath's case was undoubtedly the first successful instance recorded of double distal ligature; and although his own case (that of the elder woman) might be aortic, yet he thought the manner in which the tumour rose above the clavicle and into the episternal notch proved it to be largely innominate in origin. He did not think that ligature of the left carotid for aneurism of the arch, as mentioned by Mr. Holmes, could be compared to the distal operation for innominate aneurism, whence two large streams of blood were flowing, the larger being that going through the subclavian. According to Mr. Holmes's view, occlusion of the smaller of these two streams would suffice. Mr. Erichsen had argued the question, and decided in favour of the ligature of both vessels. He (Mr. Barwell) thought Mr. Holmes went too far in stating that ligature of the subclavian in the third part would increase the stream on the cardiac side of the ligature. Surely it must decrease it; and their main object was to diminish the force of the current in the aneurism. It was true that in the case he brought forward last year the subclavian was found to be occluded, and he confessed his inability to explain how the circulation had been carried on in the limb. But he believed that the longer collateral circulation was delayed, the more chance

there was of the cure of the aneurism; for in the case in which some months elapsed before the pulse returned in the radial artery, the result was more satisfactory than in the one where the radial pulsation returned rather rapidly. He would even go further, if he dared, and apply an Esmarch's bandage to the limb, with a view to prevent for a time free circulation through it, and thus promote stagnation in the aneurismal sac. As to the mode of ligature, it was a matter of indifference whether the inner coat were divided or not, but division of the stronger middle coat should, he thought, if possible, be avoided. In using the silk ligature there was always a risk of secondary hemorrhage occurring when it separated, adhesions only preventing this, whereas the catgut was left on the vessel. His plan was to tighten the ligature sufficiently to arrest pulsation beyond, then to stretch it a little beyond this to allow for slipping, and then to tie the second knot; and he believed that cases of return of pulsation after ligature by catgut were not due to the ligature being too loosely tied, but in consequence of the second knot slipping. The risk of such slipping of the knot was one objection to catgut, which varies very much in quality, and he was at present engaged in devising some material for ligatures which should not divide the coats too much, and yet be capable of being tied with a firm knot.

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On Hydrarthrosis and Arthritis of the Knee, consecutive to Lymphangitis of the Lower Limb.

Prof. VERNEUIL, Surgeon to the Pitié Hospital, draws attention (*Lancet*, Jan. 4, 1879) to a variety of affections of the joints, which he does not believe has yet been described, but which cannot be very rare, as in his single practice he has met with it five times. He thus describes it: I mean the propagation to the synovial membrane of the knee-joint of a superficial inflammation, originating in the subcutaneous lymphatic *réseau*, and assuming the form of lymphangitis of the large vessels, or that of erysipelas. Owing to the precision and the distinct character of its etiology, and the gravity of its prognosis, I consider that this variety merits special mention.

First, I will give a brief summary of my five cases.

Some twenty years ago I was called by one of my colleagues to see a patient living in the neighbourhood of Paris. He was a merchant, fifty years of age, much broken down by excesses of all sorts, and had been obliged to remain in bed for a fortnight on account of lymphangitis of the leg. The mischief had begun by a small excoriation of one of the toes which had become irritated by walking. The inflammatory accident had developed suddenly, the limb was covered with red streaks, and a certain number of small superficial abscesses had formed around the inflamed lymphatic vessels. When I saw the patient several of these abscesses had already been opened, but there remained many more ready for incising, and others in course of formation. Two of these collections were of the size of a large olive, and were situated on the internal aspect of the knee. I incised them obliquely, and let out a considerable quantity of phlegmonous pus. I adopted the same treatment with the other collections, which were situated on the leg and thigh. On subsequent days other incisions became necessary; nevertheless, matters seemed to be progressing as favourably as the debilitated condition of the patient would permit, when suddenly the knee became the seat of violent pain and considerable tumefaction. These new symptoms had begun on the inside of the knee, round the spot where I had opened the two abscesses a week previously. Purulent arthritis set in with great rapidity, in spite of every means we could adopt. Different operations, including amputation, were proposed to the patient, but all were declined. The general condition became worse

and worse, and the unfortunate patient died three weeks after the articulation had suppurated.

The second case came to my knowledge a few years later, and was that of a girl fourteen years of age. The patient was a slim, delicate, and nervous child. The nail of her big toe had fallen off after a contusion it had sustained, and a small collection had formed underneath, which opened spontaneously. Shortly afterwards diffused lymphangitis covered the whole limb. The swelling soon subsided, but several circumscribed collections were formed successively. The doctor attending the case incised these little abscesses, amongst which was one situated on the inside of the knee. On the next day the patient complained of pain in her knee, which was swollen. I was called in, and believed at the time that the articulation had been opened. Purulent arthritis followed its course in spite of all we could do. The pus diffused into the thigh, the leg, and the popliteal space, the ganglions of the groin began to suppurate, and a purulent collection formed in the iliac fossa. I proposed amputation of the thigh, but the family refused all active intervention, and the child died after three months' incessant suffering.

A man, forty-eight years of age, very thin, and of a cachectic appearance, came under the care of my friend, M. Oulmont, at the Hopital Lariboisière, for an acute malady presenting all the symptoms of typhoid fever. During the course of the disease a gangrenous patch formed on the dorsal aspect of the right foot, and when this fell one could see the tendons and ligaments of that region as well as some of the metatarsal bones. It was in that condition the patient was passed into my wards. I tried to improve the general health, and at the same time cleansed the wound, which had rather an ugly appearance. The patient was making slow progress when suddenly he had a rigor accompanied with vomiting and a high temperature. Shortly after traces of lymphangitis were to be seen starting from the wound on the foot. The red streaks were distinctly visible on the anterior and internal aspects of the leg, inside of the knee, and all along the course of the femoral vessels in the thigh. Rest, emollients, and mercurial frictions were ordered along the inflamed parts, and soon afterwards all the mischief disappeared except near the knee, where some lymphatic vessels became more and more swollen, and finally gave rise to a badly circumscribed phlegmon occupying the whole internal aspect of the joint. The articulation remained healthy for a while, but two days after, just as I was about to incise the phlegmon, the inflammation was communicated to the synovial membrane. I thought at first that it was only a simple hydrarthrosis, owing to the neighbouring inflammation, but when I had incised the abscess I found that the contents of the articulation, also composed of purulent matter, poured through the cutaneous incision. This complication supervening in a man already worn out, and who was passing a quantity of albumen in his urine, rendered the case hopeless. With much regret I proposed amputation, but this was refused, and the patient died at the end of eighteen days. The post-mortem examination showed a strongly injected synovial membrane, destroyed cartilages, and the spongy tissue of the bones exposed. The ligaments were softened and ruptured.

I met with the fourth case in 1869, whilst I was at the Lariboisière Hospital. A man, thirty years of age, who had always enjoyed good health, though of a rather sickly appearance, came under my care in the month of December for an extensive swelling of the foot and leg of some days' standing. The symptoms were those of phlegmonous erysipelas, and began around an ulceration which had been caused by a badly-fitting boot. The temperature was very high, the abdomen distended, the tongue dry, there was intense thirst—in fact, the general condition was very unsatisfactory. Rest, elevation of the limb, mercurial fric-

tions, purging, and sulphate of quinia, ameliorated this state, and all that remained was a phlegmon of the big toe, which opened spontaneously near the interphalangeal articulation. At the end of a few days the patient was able to walk about the ward. This improvement did not last long. Without any known cause the general symptoms suddenly returned, and the limb became again swollen, but this time as high up as the groin. The knee became extremely painful, considerably aggravated by the slightest touch or movement. It was easy to see that arthritis had set in, complicating the erysipelatous swelling. An appropriate treatment caused the swelling of the limb again to disappear, but the knee still remained enlarged and fluctuating, being manifestly affected with hydrarthrosis. Blisters were applied round the joint, and the fluid diminished a little in quantity; but the general condition of the patient remained unaltered, the temperature continued high, and soon an eschar formed over the sacrum, while an attack of pneumonia of septic nature came on and caused a fatal termination of the case in the latter part of February. At the post-mortem examination a large quantity of serous fluid, slightly clouded with pus, was found in the articulation.

My last case occurred at the beginning of the year 1878. A tall, thin, sickly-looking man, about sixty years of age, came under my care for subacute hydrarthrosis of the right knee of two or three days' standing, which gave him a little pain and caused him to limp. On examining the limb, I saw on the dorsal aspect of one of the toes a slight wound covered with a crust, and also an cedematous swelling of the leg, with two or three red fluctuating spots; on the inside of the knee were two lymphatic abscesses, typical in nature. My diagnosis was hydrarthrosis following on lymphangitis. This last-named affection had disappeared, and only left the circumscribed abscesses; but, on questioning the patient, we found that about ten days previously his leg had suddenly become swollen, painful, and streaked with red lines. These symptoms had been accompanied by malaise, fever, and rigors. I placed the limb in an apparatus, opened the three little abscesses of the leg, and contented myself with painting the two situated inside the knee with tincture of iodine. In a week these two collections disappeared, as did also the hydrarthrosis, and the following week the patient left for the convalescent home at Vincennes.

The five cases I have related present the greatest analogy one with the other. A small wound on the foot is the commencement; then, in four instances, lymphangitis of the large vessels takes place, with formation of circumscribed abscesses; and in the fifth case we have a kind of phlegmonous erysipelas very much resembling diffused lymphangitis. With the exception of the little girl, who was rather sickly, the patients were all anæmic, weak, and of a poor appearance, consequently would be favourable subjects for diffused inflammations. In each case where we were called upon to watch the invasion of arthritis, we remarked that the symptoms came on very suddenly, and with great intensity. In three cases the arthritis was purulent from the beginning; in the two others the fluid remained serous or sero-purulent. In four cases arthritis was preceded by lymphangitis and the formation of circumscribed abscesses. In the fifth case the articulation seemed to become affected at the same time as the leg became tumefied.

Several conjectures may be made upon the mode of transmission of the inflammation. One may suppose, for instance, that the lymphatic vessels coming from the synovial membrane and opening into the larger vessels become inflamed from their termination down to their point of origin in the synovial membrane. This mode of propagation is met with in superficial lymphangitis of the limbs. It may also be conjectured that, as the subcutaneous lymphatics are only separated

from those contained in the synovial membrane by a thin layer of fibrous tissue, the inflammation forced that barrier. There is no reason to doubt the possibility of the opening of one of the lymphatic abscesses into the articulation. The purulent arthritis continues its course, which is more rapid if the patient is in a debilitated condition. It is thus that the death of the first three patients is accounted for, having refused all operative interferences which might possibly have saved their lives. Hydrarthrosis naturally offers much less cause of apprehension, and in our last case we saw it disappear very rapidly. The diagnosis is generally easy, for it will always be possible to recognize the lymphangitis or the initial abscesses.

I have little to say about the treatment. The only lesson to be gained from these cases as to the treatment is that lymphangitis situated on the inside of the knee should arrest special attention. Early incisions are also, I believe, an advantage.

As yet all my cases have had reference to the knee-joint, but I am quite ready to admit that other articulations may become the seat of similar affections.

On Cataplasms in Arthritis.

Dr. DIEULAFOY, in an article inserted in the *Gaz. Hebdomadaire* for November 29, observes that a considerable number of cases of inflammation of the joints pass into the chronic condition. Among scrofulous and lymphatic subjects, persons having gonorrhœa, and in women during the puerperal condition, arthritis has a great tendency to assume the chronic form. The disease, it is true, rarely goes on to a white swelling or an ankylosis, but, without attaining this extremity, a chronic arthritis may last months or years, entailing all the well-known ill consequences. For such arthritides the most varied treatment has been employed. Internally, cod-liver oil and preparations of arsenic or iodine have been given, while locally blistering or cauterization, according to the case, has been resorted to, the limbs having been rendered immovable by some form of apparatus; and, thanks to these various means, used separately or in combination, good results are generally obtained. Trousseau, who had so fertile an imagination for therapeutical procedures, was in the habit of resorting to an application in these cases, the efficacy of which Dr. Dieulafoy has had frequent opportunities of witnessing both under Trousseau and in his own cases. This consists in the employment of a cataplasm, the description of which requires to be detailed.

According to the size of the joint, from one and a half to two kilogrammes of bread (two kilogrammes being required for the knee-joint, and one sufficing for the wrist) are to be cut up into pieces, care being taken to remove the hard portions of the crust; and these pieces are to be steeped in water for about a quarter of an hour. By this time the bread is strongly imbibed with water, and a portion of this is to be pressed out by means of a cloth or napkin, so as to leave the bread merely in a moist state. So prepared, the bread is placed in a water-bath (*bain-marie*), where it should remain three hours; and when it is taken out it forms a kind of dry paste, which is to be moistened gradually by the addition of spirit of camphor. This mass is to be kneaded for about five minutes until it has acquired the tolerably firm consistence of "plum-pudding," or of glazier's putty. Here, indeed, is the delicate part in the preparation of the cataplasm, a firm consistence being essential; for if it is too soft it will become too diffused by the compression exerted over the joint, while if too hard it ceases to be homogeneous, breaking up into fragments, the indurated portions irritating the skin. The attainment of this consistence must be very carefully attended to, the tendency of those unaccustomed to the preparation of the cataplasm always being to make it too soft, either because they have not sufficiently pressed the water out of the bread before

placing it in the bath, or that they have poured over it too rapidly too much of the camphorated spirit. The poultice thus prepared is to be spread upon a piece of cloth, the shape of an elongated rectangle, of a sufficient size to allow of the entire joint being enveloped in it. It is desirable that the edges of the cataplasm should be at least a centimetre in thickness, in order to avoid the rapid desiccation which takes place when the edges are thin. Over the surface of the cataplasm is spread a very liquid mixture, composed of camphor seven grammes, extract of opium and extract of belladonna of each five grains, and alcohol *q. s.* It is to be applied direct to the joint, and covered with oiled silk. The whole is fixed, and a somewhat energetic compression is exerted by means of a flannel bandage several metres in length, a calico bandage of the same length being applied over the flannel one, the length of these two bandages depending upon the dimensions of the cataplasm, which has to cover the entire joint; and, to prevent their detachment, the folds may be sewn together. The compression exerted must be considerable, but not to the extent of producing œdema: So applied, the bandage should remain on eight or ten days, and, on its being then removed, it is found to be as fresh, moist, and pleasant-smelling as when first put on, the skin upon which it has reposed being in a perfectly healthy state. The price of the cataplasm (six francs, and three in hospitals) may seem an objection to its employment; but this ceases to have any value when it is considered that the application remains *in situ* for at least a week.

The indications for its employment need not be specified beyond saying that in all chronic or subacute arthritides, whatever may be their nature or cause, when other means have failed, or before these have been employed, Trousseau's cataplasm may render the highest service. Dr. Dieulafoy has already published several cases proving this, and concludes this communication with two others. The duration of the treatment necessary varies frequently; a single application will not always suffice, and a second or third, or even a fourth, may be required; the treatment thus, even in obstinate cases, not exceeding a month in duration. Of course the local treatment does not exclude the employment of general remedies.—*Med. Times and Gazette*, Dec. 21, 1878.

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A very rare Case of Intra-Capsular Fracture of the Neck of the Femur with Great Flexion, Abduction, and Inversion of the Limb.

Dr. WILLIAM PIRRIE, Professor of Surgery in the University of Aberdeen, records (*Lancet*, January 4, 1879) the following case.

Widow M., a thin, pale, weakly-looking woman, eighty years of age, was admitted into one of my wards in the Aberdeen Royal Infirmary on Monday, the 14th of October last, having sustained a severe fall on the lower part of her back and right hip, caused by tripping on a door mat and falling upon a bare hard floor, the accident having happened two days previous to her entrance into the hospital.

The patient was admitted at the conclusion of the visit on Monday, and stated to me on Tuesday, that since the occurrence of the accident she had suffered intense pain in the region of the right hip, that the limb had remained immovable in the same position, and that her urine and feces had been passing off involuntarily.

Before bringing the patient under the influence of chloroform, with the view of making a thorough examination, I observed that she could only lie on her back inclined to the left side, with the right thigh so much flexed, adducted, and inverted, that her right knee lay high up in the left lumbar region, that the outer aspect of the thigh looked directly forwards, and that it was necessary to support the right foot by means of a pillow in order to prevent its falling down and thus

rotating the thigh outwards, which caused excruciating pain at the hip-joint. From the lower part of her back and posterior aspect of the right hip a portion of skin about the size of the hand had been removed by the fall, and a black, gangrenous slough had formed on the denuded part. When the examination had proceeded thus far, I thought that this case was probably an example of that peculiar dislocation of the hip-joint described by Bigelow, and delineated by fig. 13, page 63, of his most interesting work on "Dislocations and Fractures of the Hip-joint," a copy of which figure is here inserted. The patient having been



brought under the influence of chloroform, I easily traced with my finger the outline of the trochanter major, and found that its upper border was directed downwards and backwards. I could not discover the ball of the femur, and therefore came to the conclusion that it remained in the acetabulum. On rotation of the thigh, the trochanter major did not describe the segment of a circle, as in a dislocation, but was observed to revolve on its own axis, as in fracture of the neck of the thigh-bone, and during rotation slight crepitation was elicited. From the above symptoms I was convinced that this was a case of fracture of the neck of the femur with flexion, adduction, and inversion of the limb, a

variety of fracture not hitherto described, as far as my reading has enabled me to judge. Having formed this opinion, I reduced the fracture by taking hold of the knee with one hand and the foot with the other, by placing the leg at a right angle to the thigh, by abducting, rotating outwards, and bringing down the limb by the side of the other—in short, reduction was accomplished by practising the last three movements adopted by Bigelow for reduction of dislocation of the head of the femur on the dorsum of the ilium. When the limb was thus brought into proper position, it exhibited no tendency to eversion or inversion, and there was scarcely any appreciable shortening.

For the first twenty-four hours following reduction the affected extremity was kept at rest by placing a long sand bag by the side of the patient's trunk and limb, and afterwards by applying to the outer side of her pelvis, thigh, leg, and foot a long splint, composed of long broad bandages charged with plaster-of-Paris, and moulded into the shape of a Desault's splint. The test-line of the ilio-femoral triangle, shown by Bryant to be so valuable for enabling the surgeon to arrive without excessive manipulation at a reliable diagnosis in fractures of the neck of the thigh-bone and Nélaton's test-line for dislocation of the head of the femur backwards, were not available in this case, owing to the extraordinary position of the femur; but the already described symptoms produced a decided conviction in my mind that the case was one of fracture of the neck of the thigh-bone with the limb in a position which I had never before seen in any example of that injury, and the post-mortem examination made six weeks after the reduction of the fracture proved that my diagnosis was correct.

From the moment that the limb was made straight the patient remained perfectly free from pain in the hip, but frequently complained of pain in the knee, which was perfectly sound. This pain was chiefly seated within and at the inner side of the joint—a symptom so common in morbus coxæ, sometimes misleading an unwary surgeon, but rarely, if ever, met with in injuries of the hip-joint, judging from my own experience. If the conditions in which this symptomatic pain is experienced be disease at the filamentous terminations of one branch of a nerve, and the pain reflected to the terminations of another branch of the same nerve, conditions furnished by the anterior branch of the obdurator nerve sup-

plying the hip, and the posterior branch of the knee-joint, it is difficult to understand why the symptomatic pain is experienced so severely and frequently at the knee in disease, and so rarely, if ever, in painful accidents, of the hip-joint.

Six weeks after the application of the plaster-of-Paris bandage-splint, and three days before the death of the patient, the splint was removed, and the limb remained straight, without any tendency to eversion or inversion, and there was no appreciable shortening.

Notwithstanding the occasional and unavoidable contact of urine with the denuded surface on the patient's back, which was covered with a large gangrenous slough on her admission, by the application of turpentine, carbolic, and other dressings, and the removal of all pressure by means of a water-pillow ring filled with air, the slough eventually was removed, and granulations made some advancement; but these attempts at healing were fruitless, owing to the great weakness and age of the patient. The weakening effects of this large sore, together with amyloid degeneration of the kidney, caused death fifty days after the occurrence of the injury.

The post-mortem examination was conducted by Dr. Rodger, pathologist to the Aberdeen Royal Infirmary, who found that the capsular and ilio-femoral ligaments were perfectly entire, the latter being thicker and stronger than usual; that the neck of the femur was fractured close to the ball of the bone, the plane of the fracture being at a right angle to the long axis of the neck: that the outer fragment was considerably shortened, *débris* occupying the plane of the fracture; that there were no bands uniting the fractured surfaces to one another, and that there was no effusion into the joint, and no signs of the inflammatory process. The round ligament was perfectly entire, showing that the ball of the bone had never left the cavity of the acetabulum.

I believe that the integrity and tension of the ilio-femoral ligament was the cause of the adduction, flexion, and inversion of the limb, and that by its causing the centre of the motion to be situated at its attachments to the anterior intertrochanteric line of the femur was the explanation of the facility with which the outer fragment was returned into its proper position by the manipulation of the limb.

Of the one hundred and thirty cases of intra-scapular fracture of the neck of the thigh-bone which have come under my notice, and where the accuracy of diagnosis was verified by dissection, this is the only case I know of with flexion, adduction, and rotation inwards of the limb. Of the remaining number, in one case only have I met with rotation inwards; the limb in other respects occupying the usual straight position. I watched that case of intra-capsular fracture with inversion during life, and had an opportunity of verifying the diagnosis after death, and have been for many years in the habit of exhibiting the preparation to the students of surgery in the University of Aberdeen.

Nerve Stretching.

Two cases of nerve stretching were reported by DUPLAY at a meeting of the *Société de Chirurgie* (December 6, 1878). A man, aged 29, two months before he came under notice, was wounded in front of the forearm with a knife. The wound had healed, but it was found that the muscles supplied by the radial and median nerves were paralyzed; the skin of the forearm, at some points, had lost its sensibility; at others there was a degree of hyperæsthesia. Both nerves having been exposed by incision were found injected, as though slightly inflamed; they were stretched. The next day sensibility in the affected parts was noted, the hyperæsthesia disappeared and the muscles were no longer paralyzed. There

was no relapse into the former condition. The second case was a man, aged 26, who some time before had been wounded in the wrist; a cicatrix had formed just above the pisiform bone. At this point a small fibrous patch existed, seeming to adhere to the flexor carpi ulnaris muscle, and being very painful on pressure. By means of an incision, it was found that the little tumour was in connection with the ulnar nerve, and after the nerve had been fully stretched the tumour disappeared. The following morning the interossei muscles had regained their contractility, which before the operation had been absent, sensibility had reappeared, and the pain on pressure was no longer present. Improvement continued, and only a slight degree of muscular atrophy existed when the patient left the hospital.—*Lond. Med. Record*, Jan. 15, 1879.

Midwifery and Gynæcology.

The Value of the Expression Method of Kristeller in Head Presentation.

This is the subject of a contribution by Prof. BIDDER, of St. Petersburg, in the *Zeitschrift für Geburtshülfe und Gynäkologie*, iii. band, 2 heft, 241. The author strongly supports the advantage attainable from the method properly conducted, and thinks, in a great many cases it may replace the use of forceps, where there is simply a defect of expulsive power, without any other abnormality. He believes that the method is rejected by many obstetricians, because Kristeller advocated its use in the first stage, in which Bidder regards it as unsuitable, and also recommended the hand to be applied so as to produce pressure and friction both, whilst the only proper method is to apply pressure to the upper pole of the fetus only.

Bidder looks upon the method as merely furnishing a certain amount of fetal axis pressure, and therefore holds that it is only admissible during the second stage, when that force of the uterus naturally comes into play. It should also consist in merely a steady push by one hand on the upper pole of the fetus, care being taken, by rectification of the inclination of the uterus or otherwise, that the pressure is directed along the fetal axis, and that the latter is kept normal during the pressure.

If any serious obstruction to the onward progress of the head is found to exist, such as an obstinate defect of rotation, the method should not be persisted in, in case pressure upon the placenta should asphyxiate the child, but the forceps, or other measures, must be employed. It should be a steady pressure, and not a combination of pressure and friction.

Professor Bidder gives an account of a series of 81 cases in which it was successfully applied. He does not regard it as likely to cause metritis or parametritis, and considers that it is much less likely to lead to septicæmia than forceps, inasmuch as it is less likely to lead to injury of the soft parts thus:—

Of the 81 cases delivered by the expression method, 34 went through the lying-in period with perfect health, 38 were the subjects of slight illness, 7 became seriously ill, and 2 died.

Comparing these results with 75 easy forceps cases, in which the instruments were applied to the head when it was quite at the floor of the pelvis, or even on the perineum, Bidder states that only 13 of the patients continued quite well, that 34 were slightly ill, 20 seriously so, and 8 died.

He considers the method applicable so soon as the head has passed the outer

os and the membranes are ruptured, and does not think that it need be delayed till the head is distending the perineum and vulva.—*Edinburgh Med. Journ.*, Feb. 1879.

The Importance of Nephritis in Pregnancy.

This is the subject of an interesting paper by Dr. Hofmeir in the *Zeitschrift für Geburtshülfe und Gynäkologie* (Bd. iii. heft 2). According to the statistics of the Berlin University Gynæcological Institution for 10½ years, 137 cases of nephritis complicating pregnancy were noted out of a total of 5000 deliveries, or 2.74 per 100 cases. Regarding the results: Of these 137 cases the following tabulated summary is given—30 of the patients suffered from nephritis only, and of these 11 died, 22 were discharged alive, 2 were sufferers from the acute, and 31 from the chronic affection. Of the children, 20 were born dead, 15 were born alive, and in 2 the condition of the children is not stated. 104 of the patients suffered from both nephritis and eclampsia, and of these 41 died, 63 were discharged alive, 89 were sufferers from the acute affection, and 15 from the chronic affection. Of the children, 62 were born dead, 46 were born alive, and in 2 the result is wanting.

From these results Hofmeir argues that both for mother and child nephritis is a most serious complication in itself, even when it is uncomplicated with eclampsia. He is led to believe from his own observations, that the nephritis of pregnancy is much more liable to perpetuate itself in the form of chronic nephritis than is usually supposed. The author refrains from any attempt at explaining the special etiology of nephritis in relation to pregnancy, contenting himself with observing and accepting the fact that pregnancy does establish a special predisposition. Post-mortem examinations lead Hofmeir to agree with Virchow in holding that inflammation of the hepatic tissues is apt to be associated with the nephritis of pregnancy, thus showing that the kidney is not the only gland that is injuriously affected by the pregnant state. The prognosis, according to our author, depends most upon whether the condition is acute, that is, restricted within a few days or even hours before labour; or whether it is more chronic, that is, extends over several weeks at least. The acute form is much more likely to pass entirely away after delivery, leaving no trace of its evil effects in the form of permanent renal disease. It is also more likely to pass completely away in proportion as it is both short and slight in degree. But such cases are fully as likely to be accompanied by eclampsia as the more chronic form. Thus, of the 104 cases in which nephritis was associated with eclampsia, 89 were examples of the acute form of the disease; whereas, of the 46 cases in which the disease appeared in the chronic form, only 15 were affected with eclampsia—leaving 31 in which eclampsia did not appear. Of the 46 patients affected with the chronic form of the disease that were dismissed alive, it is noted in 8 that the patients were dismissed well, in 5 no note is made of the condition on dismissal, and in 15 of the cases it is distinctly stated that albumen was present in the urine.

The treatment, according to Hofmeir, ought to be mainly directed towards mitigating the intensity and shortening the duration of the disease. Diaphoretics, diuretics, and purgatives are then recommended, as also in severe œdema the free puncturing of the labia. The induction of premature labour, and, indeed, under circumstances of special severity, the interruption of the pregnancy in the early months, are recommended, upon the grounds that we are thereby imitating nature in removing the chief predisposing cause to the continuance of the disease, and that at best the child's chances of viability in such cases are extremely problematical, whilst the chances of the mother being restored to complete health is the greater the shorter the nephritis continues.

Hofmeir argues that we need not fear that the measures necessary for induction of premature labour should bring on eclampsia, and points out that a great majority of the worst cases of nephritis recorded by him were unaccompanied by that symptom; that the eclampsia usually comes at an advanced stage of a severe case, and that by induction of labour early it is possible that the onset of eclampsia may be anticipated and avoided. At any rate, he holds it is not likely to appear in a more severe form when arising in connection with induced labour than if occurring spontaneously. The period for inducing labour Hofmeir leaves to be decided chiefly by the urgency of the symptoms in each case.—*Edinburgh Med. Journal*, Feb. 1879.

A Peculiarity in the Rickety Pelvis.

Prof. DEPAUL at the Clinique (*Gaz. des Hop.*, December 17, 1878), called the attention of his class to a rickety deformity of the pelvis which is only occasionally observed. He was the first to describe it twenty-five years ago, since which time he has met with new examples. A pelvis so affected presents at certain points of the upper aperture, besides a contraction, some sharp bony lamellæ, cutting sometimes like the blade of a bistoury—corresponding in position to certain muscular insertions at the symphysis pubis or the ilio-pectineal eminence. These bony lamellæ cause most serious mischief; for on the head of the child, covered by the uterus, pressing against their cutting surfaces, an incision or even a true perforation of the uterine wall may be the consequence. In three such cases M. Depaul has known a true hole to have been produced, establishing a communication between the interior of the cavity of the uterus and the neighbouring parts. These bony projections, hidden by the tendinous or muscular insertions, cannot be detected during the labour.—*Med. Times and Gaz.*, Feb. 22, 1879.

The Etiology of Fibroid Tumours of the Uterus.

In the human uterus, "growths," sometimes attaining an enormous size, chiefly composed of smooth muscular fibres united by connective tissue, and nourished by bloodvessels, not unfrequently develop. They give rise to a variety of symptoms, and especially to hemorrhage of a profuse and uncontrollable character, and, except where they are intra-uterine, and not always even then, their removal is either extremely hazardous or quite impracticable. The question naturally suggests itself, what is the cause of these uterine fibroids, and can nothing be done to prevent their development? Hitherto the answer has been completely negative. Great authorities like Scanzoni, Schroeder, West, Churchill, Thomas, and G. Braun, have all confessed their inability to explain the origin of these growths; and the writers of the two most recent English gynæcological works—Lawson Tait ("Diseases of Women," page 162), and Heywood Smith ("Practical Gynæcology," pages 63–65)—have declared, the former that "why they grow is a complete mystery," and the latter that "their causes are unknown." With his usual acuteness, however, Virchow years ago expressly pointed out, in his work on Tumours, that "the irritative character of the growth of fibroids, of which there cannot be the slightest doubt, is not due to a physiological stimulus like that of pregnancy, but to a diseased condition, arising either from an excess of local irritation, or from the feeble resisting power of the affected portion of the uterus." He further indicates as probable factors in the development of fibroids, *inter alia*, miscarriages, menstrual irregularities, parturition, prolapsus uteri, and diseases of parts in the neighbourhood of the uterus.

After lying for a number of years without any sign of germination, these ideas

of Virchow's have at last fallen on fruitful soil, and the accuracy of his prevision has been to a considerable extent established by the independent observations of two good and competent authorities, Professor F. WINCKEL, of Dresden,¹ and Professor ROHRIG, of Kreuznach,² a *résumé* of whose results we now propose to lay before our readers.

If we take a number of cases of uterine fibroids, and carefully investigate the time at which the earliest symptoms made their appearance, we shall find that these growths originate most frequently at that period of life when the sexual functions are at their maximum development, namely, about the thirty-first year. This fact was first insisted on by West, has been accepted by Graily Hewitt, and is completely confirmed by Winckel and Roehrig. But a number of cases date their earliest symptoms even before the thirtieth year, decidedly negating the old idea that the climacteric period exercised an influence on the development of fibroids. The following table will make this part of the subject clear, and save further detailed explanation:—

Distribution in Decades.

							Winckel. No. of cases.	Roehrig. No. of cases.
15-20	.	.	.	.	.	.	3	2
20-30	.	.	.	.	.	.	44	46
30-40	.	.	.	.	.	.	69	85
40-50	.	.	.	.	.	.	43	37
50-60	.	.	.	.	.	.	5	6
60-70	.	.	.	.	.	.	1	0
Totals	.	.	.	.	.	.	165	176

Roughly speaking, more than two-thirds of all the cases here tabulated began between the ages of twenty and forty. Of Roehrig's cases, eighty-seven, or just one-half, originated between the twenty-fifth and thirty-fifth years.

The period of greatest sexual vigour being thus proved to coincide with the period when fibroid tumours most frequently originate, the next question is, are these growths most common in the unmarried or the married; with the disuse or the use of the sexual organs? Winckel has collected the statistics of 555 cases on this point, and finds that 140 (24.2 per cent.) were spinsters without children, 134 (24.3 per cent.) married but childless, and 281 (51.5 per cent.) married with one or more children. Of Roehrig's cases, 70 (?) were spinsters, 31 married without children, and 75 married with one or several children.

Thus, in three-fourths of Winckel's cases the patients were married, and in at least three-fifths of Roehrig's³—a fact which, taken together with similar statistics of West, Routh, Veit, and others, clearly indicates that some connection exists between the functional activity of the uterus as a childbearing organ, and the development of fibroid tumours; or as Winckel puts it, that "married women are decidedly more predisposed to this affection than unmarried—i. e., than those who can satisfy their sexual instinct either rarely or not at all."

¹ Ueber Myome des Uterus in Ätiologischer-Beziehung (Volkman's Sammlung Klin. Vorträge, No. 98).

² Zur Ätiologie der Uterus-Fibromyome (Berliner Klin. Wochenschrift, 1877, Nos. 30, 31, 34, 35).

³ There is some difficulty about Roehrig's statistics here. He gives 176 as the total number of his cases; 106 as that of the married patients; of whom 31 had no children, which of course leaves 70 cases where the patients were unmarried. But at page 449 he says "out of my 176 cases there were only *thirty unmarried* patients with fibroids." To which class are the remaining forty to be assigned?

In endeavouring to explain the greater frequency of myomata in married females, we have to remember the more varied accidents and mechanical injuries to which the uterus is liable in them—injuries during pregnancy, at the time of parturition, and for some time afterwards. In all women (except during pregnancy) the uterus undergoes increased congestion every three or four weeks for about thirty years; its arteries, in spite of their peculiar tortuosity, are subjected to a very high degree of pressure before they reach its inner coat; while the vessels of the superficial layer of the mucous membrane are, according to Henle, remarkable for their delicacy; hence we need scarcely wonder, knowing how rapidly the physiological stimulus of an ovum causes general hypertrophy of the uterine walls, if the pathological stimulus of local circulatory disturbances, congestions, etc., due to mechanical injury, should give rise to partial hypertrophy—that is, to the formation of fibroid tumours. Both Winckel and Roehrig (the latter following on the lines laid down by Winckel) assume that for the development of a fibroid tumour the uterus must receive a mechanical injury sufficient to leave a permanent *locus minoris resistentiæ*, and that the pathological alteration thus induced, and the functional hyperæmia to which, either during menstruation or pregnancy, the uterus is liable, react on one another so as to induce hypertrophy at or near the affected spot. Roehrig is inclined to regard a local chronic sharply circumscribed inflammatory process as the starting-point in many cases, and he lays stress on the necessity for an (hypothetical) “individual predisposition,” without which certain morbid stimuli would have no effect on the development of fibroids.

Turning now to the special accidents which appear to affect the growth of uterine fibroids, we may, as Winckel does, divide them into two classes—those which *directly* involve the uterus to a greater or less extent; and those which only indirectly involve it.

The first class includes the cases where the patients refer the commencement of their troubles to the early weeks of their married life, and where it appears probable that a retroflected uterus was bruised during the repeated acts of coitus which took place at that time. It also includes the cases which originated in a miscarriage, in the removal of an adherent placenta, or in some operative procedure connected with the fœtus; in a fall or blow during pregnancy, followed by premature labour; in protracted hemorrhage after childbirth, leading to imperfect involution of the placental insertion, swelling of the uterine mucous membrane, and catarrh; and, lastly, in para- and perimetritic inflammation. Out of 115 cases of his own, Winckel was able to refer eighteen (15.6 per cent.) to one or other of the above causes; and Roehrig gives details of a number of cases of the same kind, in several of which the patients suffered constant pain at the seat of uterine injury until eventually a fibroid tumour was detected at that very spot.

Under the head of indirect injury, Winckel enumerates cases in which the lifting of some heavy object was immediately followed by uterine hemorrhage, and later on by fibroid growth; and others in which a severe shock to the body set up the uterine hemorrhage, such as a fall downstairs. Both he and Roehrig lay great stress on accidents arising from want of care at the menstrual period, such as catching cold and overexertion in walking, riding, dancing, skating, and singing. Roehrig gives the details of a number of such cases, in which the relation between the injury and the development of the fibroid stands out very clearly; and he also calls special attention to the injurious effects of the prolonged fatigue which many young women have to undergo in the way of sight-seeing and mountain-climbing during their honeymoon, as laying the foundation for future fibroid disease. As an instance of this, he mentions a case known to himself, where a newly married couple ascended the Righi and Mount Pilatus on two successive

days, the lady menstruating at the time. The result was that she was laid up for six weeks at Lucerne with metritis, and for three years afterwards suffered from retroflexion and chronic metritis, with general nervous prostration, a fibroid tumour being at length discovered in the posterior wall of the uterus.

The influence of diseases of the other organs of the body upon the development of fibroid tumours has received attention both from Winckel and Roehrig; and the former mentions a number of cases in which these growths occurred in persons who had suffered from severe typhoid fever, from typhoid fever and scarlet fever, or scarlet fever and measles, in quick succession, or from acute rheumatism and subsequent intermittent fever. He explains the injurious influence of such diseases (1) by the hyperæmia and hypersecretion which they induce; (2) by the effect of the fever in causing greater friability of the uterine vessels, and consequent nutritive disturbances of the organ itself; and (3) by the prolonged supine position of the patient, which necessarily induces congestion and swelling, especially in the posterior wall and the fundus of the uterus.

Chronic uterine congestion is also a result of heart disease, and not less than seventeen of Roehrig's 176 cases were complicated with the presence of endocardial lesions (mitral regurgitation in twelve, mitral obstruction in five), eight cases being clearly traceable to acute rheumatism, and three others to hereditary influence. Whether the heart disease stood to the tumours in the relation of cause and effect cannot of course be decided accurately with our present imperfect knowledge; but one thing is pretty certain, that the heart disease was not secondary to the tumours, and due to obstruction of the abdominal circulation by the latter, for only in four of the cases did the fibroid growth exceed the size of a billiard-ball.

We can only here mention the possibilities which Roehrig entertains, that gonorrhœal vaginitis, the injection of caustic fluids into the uterus, and the prolonged use of intra-uterine stems and vaginal pessaries, may all be potent agents in inducing fibroid growth; and we must close this article with one or two remarks suggested by a general review of the facts before us. In the first place, we know that in other organs—for instance, the mamma—the development of certain new growths seems to be set going, so to speak, by a blow or some other mechanical injury, and the first symptoms of syphilomata in the brain have dated from an injury to the head; why, then, should not mechanical injuries affect the uterus in a similar manner? Secondly, we are more than ever reduced to fall back on the idea of some mechanical explanation of the origin of fibroids, because heredity fails to elucidate their presence, the hereditary element being only traceable in five out of Winckel's and six of Roehrig's cases.

Lastly, the recognition of a mechanical origin of these growths suggests the necessity for extreme care in the treatment of uterine disease, and especially points to the avoidance of any measures likely to give rise to chronic irritation.

We do not pretend in what we have here written to give more than an outline of the arguments in favour of these new views; hence we cannot too strongly urge the gynæcologist who desires more convincing proofs and larger details to study the original memoirs to which we have so often referred.—*Med. Times and Gazette*, Jan. 4, 1879.

Perforating Ulcers of the Ileum from Obstruction after Ovariectomy.

Mr. ALBAN DORAN, at a recent meeting of the Pathological Society of London (*British Med. Journal*, Feb. 22, 1879), exhibited a specimen of perforating ulcer of the small intestine, taken from the body of a woman, aged twenty-six, who was admitted into the Samaritan Hospital, under the care of Dr. Bantock, on Nov. 29, 1878. Five weeks previously she had been seized with rigour and

severe abdominal pain. A practitioner who saw her, thought she was suffering from typhoid fever, but a second practitioner, who was called in a fortnight later, could detect no symptom of typhoid fever, but found a large fluctuating tumour in the lower part of the abdomen. Shortly afterwards, she was seen by Mr. Spencer Wells and Dr. Bantock, who were of opinion that an ovarian tumour existed, and that the illness through which the patient had passed was an attack of peritonitis. Ovariectomy was performed by Dr. Bantock, on December 4th. A suppurating multilocular tumour of the left ovary was found, which was closely adherent behind, to eight or ten inches of the lower part of the ileum. The adhesions were broken down by sponges, and six small vessels, on the raw surface of intestine, were tied. The right ovary was beginning to undergo cystic change, and was also removed. With the exception of occasional vomiting and some elevation of temperature, the patient progressed favourably; but on the eighth day after the operation, she complained of a tight feeling across the abdomen, the temperature being 99.8 deg. An hour and a half later, she was in a state of collapse, and between three and four hours afterwards she died. *Post-mortem*, a pint of perfectly liquid feces was found in the abdominal cavity. A coil of ileum, partly adherent to the abdominal walls by recent lymph, was gently raised up, when a jet of liquid feces immediately gushed out of a perforation in its coats posteriorly. Above the aperture, the small intestine was filled with flatus and liquid feces; but below the perforation the coils of the ileum were matted together by recent lymph, which had been thrown out over the raw surface to which the cyst had been adherent before its removal. This part of the gut was much narrowed and quite empty, and a partial obstruction had evidently been put up by the lymph. It was situated over the promontory of the sacrum; and the coil of intestine immediately above it, being filled with flatus, had risen upwards, producing a sharp twist in the gut, which had apparently completed the obstruction. The perforation was nearly a foot above this twist. The whole of the stomach and small intestine, down to the obstruction, was deeply injected, the injection, however, following the line of the vessels, *i. e.*, transversely round the gut; and in the middle of the inflamed streaks were small elongated ulcers. The perforating ulcer was nearly circular, and its edge clean-cut without any thickening. Perforation was commencing in several neighbouring ulcers. There was no trace of ulceration of Peyer's patches. In the ileum, below the kink, the mucous membrane was pale and presented no signs of disease. Mr. Doran remarked that this case resembled one recorded by Mr. Marrant Baker, in which perforating ulcers were found some distance above a strangulated portion of intestine, in a case of femoral hernia. Mr. Spencer Wells, in his work on *Diseases of the Ovaries*, refers to a case in which symptoms of obstruction followed the removal of an ovarian tumour, and in which minute perforations were found in a portion of intestine adherent to the bottom of the abdominal wound. In his own case, the speaker believed that the severe intestinal disturbance, previous to removal of the tumour, was aggravated by the complication after operation, and the ulceration was probably in great measure due to the impaired health of the patient.

Mr. Howse thought it strange that this accident was not more common after operations of this kind. He himself had seen a case of like nature. A woman, aged thirty-six, came under his care, at Guy's Hospital, with history that twelve months before she had had all the symptoms of peritonitis. She presented a large fluctuating swelling in the abdomen, which was undoubtedly an ovarian cyst, which was removed. There were no intestinal adhesions, and only a few parietal adhesions. A few days afterwards, obstinate vomiting set in, and there was, at the same time, obstruction of the bowels. This was thought to be due to general peritonitis, but after death, it was found that a coil of ileum, immediately above

the ileo-cæcal valve, was bent on itself, owing to adhesions to other parts of the intestines. The adhesions evidently dated back to her former attack of peritonitis, and had caused partial obstruction. The general disturbance of the parts resulting from the operation had changed the partial into complete obstruction. The coil causing the obstruction was in a sloughing condition.

Hæmatoma of the Vulva.

The following case is related by Dr. J. BORONOW, in the *Allgem. Med. Central-Zeitung* (No. 96). The patient, aged thirty-one, had had six previous normal confinements. The author was summoned to attend her in the seventh confinement, labour having remained stationary for several hours, in spite of moderate pains. Examination showed that the os uteri was sufficiently dilated, the structure of the pelvis normal, and the head of the fetus in the first position; but the left labium was very much swollen, and of a bluish hue. The swelling increased visibly, fluctuated, and was soon recognized as a hæmatoma. It was thought best to apply the forceps; but, before this could be done, the tumour, which had in the mean time grown to the size of a child's head, burst, and discharged a great quantity of blood. As soon as the bleeding had ceased, the forceps was applied, and the place of the hæmatoma firmly compressed with the palm of the hand; but, notwithstanding this precaution, it was twice filled with blood before the head had been born. The patient died of exhaustion, after the second bursting of the swelling. This case is worthy of interest, because of the very rare occurrence of a hæmatoma of the vagina and vulva. According to Winckel, it has been observed once in a thousand cases.—*British Med. Journal*, March 1, 1879.

Medical Jurisprudence and Toxicology.

Poisoning with Chlorate of Potassa.

An instance of poisoning with chlorate of potassa happened some time ago in the family of Dr. KAUFFMAN in Berlin (*Allgemeine Med. Central Zeitung*, 1878, No. 99). He used to keep a certain quantity of this salt in a tin box, and give some of it daily to his children as prophylactic treatment against diphtheria, which happened to be epidemic at that time in the neighbourhood. One day, the children, while playing, possessed themselves of the box, and took each about half an ounce of the chlorate of potass. The youngest child, a girl two years and a half old, had severe vomiting, which lasted for seven hours, when she died of gastritis, in spite of all help. Another remarkable symptom of the poisoning was the profound lethargy of the child, which probably prevented its showing symptoms of pain. Another similar case is mentioned, of a young man who had taken small doses of chlorate of potass to cure himself of hoarseness. From the time of taking the first dose to the moment when he left off, the patient suffered from gastritis, and vomited every time he took the drug. These symptoms ceased as soon as the latter was discontinued. This clearly shows the latter to have been the primary cause of the inflammation.—*British Med. Journal*, Dec. 28, 1878.

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MAY, 1879.

Anatomy and Physiology.

On the Physiology of the Vesical Epithelium.

MM. P. CAZENECVE and CH. LIVOM publish (*Compt. Rendus*, No. 12, Sept. 16, 1878) papers on this subject of which the following is an abstract:—

Various opinions are held as to the power of absorption possessed by the mucous membrane of the bladder. Some consider its absorptive power very great (Segalas); others think it very feeble (Bérard, Demarquay); and a third class deny its existence (Kuss, Morel, Susini). Previous investigations have usually consisted in injecting poisonous drugs into the bladder and observing the results; but the authors of the present communication have adopted a new method of investigation, the principle of which is to establish whether or not any urea, the chief urinary ingredient, passes through the walls of the bladder. Their “modus operandi” is to tie the prepuce of a dog for some hours before the operation, so as to keep the urine in the bladder. They then expose this viscus, remove it full of urine by means of a ligature, and, after washing it externally with distilled water, they plunge it into three quarts of distilled water at a temperature of 25° C. From time to time the water outside is tested by means of hypobromite of soda, which indicates, by effervescence, the presence of urea. In a series of twenty experiments it was found that it took from three to four hours for the urea to pass through, in the case of a bladder freshly removed; but in one taken out the previous evening, dialysis occurred in from ten to fifteen minutes. The results of their numerous experiments may be summed up as follows:—

1. Desquamation of the vesical epithelium, brought about by any mechanical means, as from the blunt point of a sound, is followed by vesical permeability, and in this point they corroborate Kuss, who holds that the impermeability of the bladder is due to a peculiar property of the vesical epithelium.

2. The increase or diminution of the temperature of the body affects the characteristics of the epithelium, for in an animal well fed the function of the epithelium is very marked, while in one that had been starved it lasts only a very short time after death.

3. Injuring the kidneys, or cutting the spinal cord, affected the physiological properties of the vesical epithelium in a very marked degree.—*Journ. of Anat. and Phys.*, Jan. 1879.

Test for Urea.

Prof. SCHIFF gives (*Bericht. d. Deutschen Chem. Ges.* x. p. 773) the following test for urea: While most aldehydes enter into combination with urea in watery or alcoholic solution, surfurol acts differently, remaining unchanged. But with nitrate of urea surfurol forms a deep violet colour, which gradually darkens from the formation of a black substance.

This tint is not produced by nitric acid, as none of the mineral acids cause any change of colour if the surfurol be perfectly fresh. But while neither acids nor urea separately produce this effect, when they are added together to a solution of surfurol the change takes place. If one add to a solution of urea three parts of a saturated solution of surfurol and one or two drops of hydrochloric acid, the fluid gradually becomes coloured a beautiful purple-violet and solidifies into a dark-brown mass. This reaction takes place more slowly and to a less marked degree with allantoin, but does not occur in the case of a long series of amides which the author names, among which may be noted taurin, glycochol, creatin, uric acid.—*Journ. of Anat. and Phys.*, Jan. 1879.

Materia Medica and Therapeutics.

Thymol and Thymol-camphor.

Dr. SYMES, in the *Pharmaceutical Journal* of January 10, publishes the results of his researches on the combination of thymol, chloral-hydrate, and camphor, acting as an antiseptic. The two former drugs are rubbed together in a mortar, and an equal quantity of camphor added, which liquefies the whole, and produces a powerful antiseptic. Its virtues were immediately tested on some urine containing pus, and which was already beginning to decompose. Two drops of the compound being added to it, the putrefaction was arrested. If thymol and camphor alone are rubbed together, they also become liquid, and this is a convenient form from which to prepare the ointment. Thymol-camphor can be mixed in almost any proportion with vaseline, *ung. petrolei*, or ozokerine, and the thymol will not separate, as in crystals, when thymol alone is used. A solution of thymol in water (1 in 1000) is sufficiently strong for the spray in surgical operation. If used for the throat, milk and glacial acetic acid will be found to be good solvents for it.—*London Med. Record*, March 15, 1879.

Internal and External Use of Balsam of Peru.

WISS gives (*Deut. Zeitsch. für Prak. Med.*, No. 34, 1879) the balsam internally in the form of an emulsion, according to the following prescription: *R.* Bals. Peruv., 8 grammes; muc. gum Arabic, 2 grammes; vitellum ovi unius; aq. dest. q. s. ut. f. emulsio, 210 grammes; liq. lignam., 30 grammes. If used externally, the balsam is poured into the wounds undiluted, and the bandages used for dressing them are soaked in it. If there should be a considerable flow of pus, they must be changed several times daily. In a case of chronic catarrh of the bronchi, where the author prescribed bals. copaivæ internally, the sputa improved, but it had no effect either upon the cough or the expectoration. On giving bals. Peruv., the catarrh disappeared, even the cough which had lasted for several years, and the patients remained well for a long time afterwards. The drug has failed to prove successful in tuberculosis. The author has applied the ointment externally in different kinds of wounds, and in every case he has found it a most useful remedy; it promotes the healing of the wound by first intention, diminishes suppuration, calms pain, and is a decided antiseptic. Upon first coming in contact with the wound it causes a burning sensation of pain, which, however, does not last long. All symptoms of inflammation also cease.—*London Med. Record*, March 15, 1879.

Anæsthesia by Nitrous Oxide.

M. PAUL BERT has, he believes, devised a plan of administering nitrous oxide gas which shall enable complete anæsthesia to be kept up for some time without fear of asphyxia. The method consists in administering a mixture of nitrous oxide and oxygen, under increased atmospheric pressure. At a meeting of the Société de Biologie on February 15th, M. Bert gave an account of the first application of his method, which was made on February 13th, on a young woman aged 20, suffering from ingrowing toe-nail. The patient was placed in an apartment of an aëro-therapeutic establishment, in which the atmospheric pressure was increased; and she was made to inhale from a large bag (120 litres) containing a mixture of 85 per cent. of nitrous oxide and 15 per cent. of oxygen. Loss of sensation and muscular relaxation supervened in about a quarter of a minute; and the operator, M. Labbé, removed the nail and extirpated the matrix without any pain to the patient. The operation, including dressing, was completed in about four minutes. The eyes were closed, but insensible; the pupils were slightly contracted. At about the fourth minute, there was some contraction of the hands and feet, which ceased on the removal of the mouthpiece; and about half a minute later the patient awoke calmly, sat up, said that she had felt nothing, and asked for food. During the whole period of anæsthesia, the pulse was quiet, and the skin preserved its colour. M. Bert considers that this case confirms the conclusions at which he has already arrived by experiments on the dog as to the safety and efficacy of this mode of administering the gas. It can scarcely be said, however, that avulsion of a toe-nail is a fair test of its success in prolonged operations. It will be remembered by many of our readers that the value of nitrous oxide as an anæsthetic, not only in dental but in surgical operations, was tested rather extensively in London about eleven years ago. Mr. Clover, writing on the subject in the *British Medical Journal* of November 7, 1868, speaks of having used it in iridectomy, in operations for strabismus, in wrenching an ankylosed knee; and says that "it is well suited for reducing dislocations, for removing the toe-nail, and opening fistulæ, boils, and abscesses of all kinds." M. Bert will, however, have conferred a great benefit on surgery if he succeed in showing that nitrous oxide can be safely used as an anæsthetic in prolonged operations.—*British Med. Journal*, March 22, 1879.

Chloral as an Antidote.

Prof. HUSEMAN, of Gottingen, has been engaged in a long series of observations on the antagonistic and antidotal actions of drugs, and some of his investigations which relate especially to chloral are described in a recent number of the *Archiv für Experm. Pathologie*. Of these the following is a summary. Chloral hydrate is known to act as an antidote to strychnine, lessening the spasm, and even preventing death. It has a similar action in the case of the mixture of strychnine bases sold under the name of brucin, and also against the opium alkaloid thebaia, which simultaneously tetanises and lessens sensibility. The spasms produced by chloride of ammonium diminish under the employment of non-fatal doses of chloral hydrate, and can indeed be completely stopped. Nevertheless death occurs, probably from the paralyzing effect of both substances on the respiratory centre. The antidotal effect of chloral on the action of the poisons which cause convulsions by their action on the brain is not the same for all these substances. The quantity of the poison which can be counteracted by the antidote appears to be considerably greater in the case of picrotoxin than in the case of codeia. Of the latter, indeed, the fatal dose, and even a quantity half as much

greater, can be rendered harmless, but twice the fatal dose cannot be counteracted, and is still fatal. Calabarin is counteracted by chloral hydrate in about the same degree as codeia. The symptoms produced in rabbits by poisoning with baryta are not materially altered by the action of chloral, which does not appear to prolong life. So, also, with carbolic acid; the spasms produced by it are not arrested by chloral, and the minimum dose fatal to rabbits still produces death. The combination of a fatal dose of carbolic acid with a non-fatal dose of chloral hydrate causes in rabbits a remarkable fall of temperature, which is not produced by the action of these alone. As a rule, when chloral antagonizes the action of these cerebral poisons, the respiration sinks in frequency much more than in the case of the analogous action of chloral on the tetanizing poison. The depression of temperature caused by the chloral is almost independent of any peripheral loss of heat. The elevation of temperature due to division of the spinal cord is hindered by chloral hydrate. The depressing action of thebaia and codeia on the cerebrum, which is distinctly perceptible in many animals in addition to their action in causing spasm, is the chief effect recognizable in man. On the one hand, thebaia has a distinct action in lessening pain; and on the other, in human poisonings with this opium alkaloid, chloral hydrate is of little use, and in the case of poisoning by codeia, on account of the collapse which is produced, it is positively injurious.—*Lancet*, March 15, 1879.

Cinchonin seu Quinidine.

From careful observations made in Professor Wagner's Clinic at Leipsic, Dr. ADOLPH STRUMPELL recommends quinidine as a substitute for quinine. This alkaloid is isomeric with quinine, and has the formula $C_{20}H_{24}N_2O_8$, and was first extracted from quinoidine in 1848 by Van Heyningen. Pasteur gave it the name of quinidine in 1853; and in 1868 O. Hesse proposed that of "cinchonin," owing to the adulteration of the commercial quinidine in the German market with cinchonidine.

Cinchonin or quinidine is employed in medicine as the sulphate, which crystallizes in long shining prisms. It is soluble in chloroform, alcohol, and hot water, but soluble with difficulty in cold water. Its purity is tested by dissolving one part of the sulphate in twenty parts warm water, adding one part iodide of potassium, and filtering after cooling. If pure, ammonia gives no precipitate or cloudiness when added to the filtrate.

Wunderlich appears to have been the first to make therapeutical experiments with quinidine in 1855; and he declared that "its effects were almost identical with those of quinine." For some reason or other, however, he gave it up; and for the last ten years it has not been used in the hospital at Leipsic.

Lately, owing to the exertions of Jobst of Stuttgart, experiments have been again made with it on a large scale by Machiavelli in the Italian military hospitals, and Professor von Ziemssen at Munich, in both cases with success.

It should be noted that the price of the purest quinidine supplied by Jobst was a third less than that of quinine in the autumn of last year. The cases treated at Leipsic with cinchonin were fifty in all, chiefly intermittent fever and typhoid, and to a small extent pneumonia, erysipelas, puerperal fever, and phthisis.

In typhoid fever its effects are equal, and in some cases superior, to those of quinine. Within an hour or two the fever declines, and the lowest temperature is reached in from eight to twelve hours. A dose of 1.0 to 1.5 grammes reduces the fever on the average 2° to 2.5° C., but falls of 3.5° to 4° , and once of 4.5° , have been observed. The dose need not be larger than one of quinine, and at Leipsic they give it in solution in peppermint-water, with a little dilute sulphuric

acid. The rise of temperature which follows the fall produced by quinine takes place slowly, and in favorable cases the original height may not be reached again for twenty-four to thirty-six hours, or even longer, and even then the next morning remission may be greater than it would otherwise have been.

The frequency of the pulse falls with the temperature, but not by any means always parallel with it. The greatest drawback to quinine, especially with typhoid patients, is the subsequent vomiting which very often occurs. It takes place in from a quarter of an hour to two hours afterwards, and is best controlled by ice or a few drops of tinct. opii. Ringing in the ears, perspirations, and collapse are rare—in fact, the latter symptom occurred only once in a typhoid patient who accidentally swallowed 4.0 grammes cinchonin, and who died seven days afterwards, though whether from severe ulceration of the bowel or from the effects of the drug is doubtful. In intermittent fever (twenty cases) cinchonin in 1.5 to 2.0 gramme doses, given six to twelve hours before the fit, acted *exactly like quinine*. A somewhat smaller dose before the second attack, and daily doses of 0.5 to 1.0 for a few days afterwards, completed the cure. Only one case relapsed. In erysipelas, croupous pneumonia, and puerperal fever, cinchonin acts precisely like quinine; on the other hand, the fever of phthisis resists its influence as it does that of other similar remedies.—*Med. Times and Gazette*, March 8, 1879.

How to make Trousseau's Cataplasm.

Dr. DIEULAFOY (*Lyon Méd.*, January 26, 1879), who has frequently applied this cataplasm with much success, gives the following directions for its preparation: Take, according to the size of the affected articulation, three or four pounds of bread—four pounds are sufficient for the knee-joint, two pounds for the wrist. Cut it into pieces, removing carefully the hard portions of the crust, and soak the bread for about a quarter of an hour in water. It is then taken out, tied into a cloth, and squeezed to express a part of the water absorbed, so that the bread remains moist, but not too wet. It is then put into a steam bath, and allowed to remain there for three hours, when it becomes like dry paste, which is softened by the addition of camphorated alcohol. This dough is then kneaded for about five minutes, till it is of the consistence of plum pudding. This is the most delicate point in the making of the cataplasm, because if it is too soft it will give way, and spread out under the pressure of the dressing, and if it is too hard it is apt to crumble and break into small pieces, which might injure the skin. The degree of consistency of the cataplasm must, therefore, be very carefully supervised, because unless one is in the habit of making it, there is always a tendency to make it too soft, either because the bread has not been squeezed sufficiently before having been put into the steam bath, or because too large a quantity of camphorated alcohol has been poured upon it. The dough, having thus been prepared, it is spread on a linen bandage in the shape of a rectangle, large enough to cover the whole of the joint. The poultice must be at least one-third of an inch thick at the edges, in order to prevent the thinner portions from drying too quickly.

The surface of the cataplasm is then painted with the following liquid mixture: camphor, seven grammes; extr. op., five grammes; extr. bellad., five grammes; alcohol, q. s.

This being done, it is applied by being put over the affected joint, and covered by non-evaporant covering. The whole is then firmly fixed by means of a long flannel bandage, over which is placed a linen one of the same length. These bandages vary in length, according to the size of the joint, and, consequently, to the size of the poultice. The joint having been thus bandaged, it must remain

perfectly immovable; the compression, although firm, must not cause the underlying parts to become œdematous; this may be prevented, however, by bandaging them also. In order to prevent the layers of the bandages from slipping, they must be sewn to each other. The cataplasm then remains in the same position for eight or ten days, after which time it is removed, and found to be as fresh and moist as if it had been just applied; it still smells of camphor, and does not present the least trace of mould. The skin which has long remained in contact with it is perfectly healthy, unless the cataplasm should have been too thin at the edges, thereby either drying too soon, or giving way under the pressure of the bandage, and causing the skin to excoriate. This is Trousseau's cataplasm. At first sight it may appear too expensive for poorer patients, because the cost of the material amounts to from two and sixpence to five shillings, if the appliance is made in a hospital. If, however, we consider that, the expense having been once incurred, the cataplasm remains in its place for at least eight days, during which time no other medicine is given, we are soon convinced that it is even cheaper than most other appliances. The indications for the use of this cataplasm are so obvious that they need not be repeated here. In every kind of chronic or subacute inflammations of the joints, when other means, such as blisters and cauterization, have proved unsuccessful, and even in the first instance, Trousseau's cataplasm will be found most useful and advantageous.—*London Med. Record*, March 15, 1879.

Chloral Hydrate Enemata in Affections of the Stomach.

STARCKE (*Berl. Klin. Woch.*, August, 1878) had been suffering from chronic catarrh of the stomach, the worst symptom of which was sleeplessness, to such an extent that the patient hardly slept one hour out of the twenty-four. His colleagues advised him to try chloral, but as the state of irritation his stomach was in would not allow him to take it *per os*, he resolved to administer it to himself *per rectum*. An aqueous solution of 5 per cent. of chloral was warmed to 35°C, and 10 grammes of this solution were injected. A few minutes later on an agreeable sensation of warmth spread over the body, and the patient fell asleep and slept soundly for five hours. The author continued with his treatment for five months, using during this time about 120 grammes of chloral; after the few first doses he improved to a marked extent; his appetite came back, and his meals were no longer followed by headaches and nausea. The author strongly advocates the use of chloral hydrate in the form of enemata in case of gastric irritation; the point of the syringe must be well oiled, and introduced beyond the sphincter; the fluid ought never to be injected cold, but always warmed to the temperature of the body. The dose given *per rectum* must be smaller than it would be *per os*; fifty centigrammes are sufficient.—*London Med. Record*, March 15, 1879.

Medicine.

The Influence of Climate on Phthisis and Rheumatism.

Dr. H. PETERS, of Elster, Saxony, has published in the *Berliner Klin. Wochenschrift*, Nos. 2, 3, 1879, some very interesting and careful observations on the influence of the chief meteorological elements of climate on chronic diseases of the lungs, and on chronic rheumatism of the muscles and joints, made

by himself in 1865 at Bad Ottenstein, Saxony, where a large number of phthisical and rheumatic patients passed the summer under his care. Ottenstein lies 1350 feet above the sea, and is sheltered on the north, east, and west by the mountains of Saxon Switzerland. The climatic elements of which notice was taken were (1) the temperature; (2) the relative humidity; (3) the barometric pressure; (4) the direction of the wind; (5) the quantity of ozone. And with regard to each of these the following data were utilized: (1) the daily mean; (2) the mean of each period of five days; (3) the daily difference between the maximum and minimum readings; (4) the mean of these differences for five days; (5) the daily maximum; (6) the daily minimum; (7 and 8) the means of both. The observations were made at 6 A. M., 2 P. M., and 10 P. M., but the wind was only observed twice daily, and the daily mean and the five days' mean were calculated according to a method described in the original.

The symptoms to which attention was directed in the phthisical and chest patients were (1) the onset of pains in the chest and back; (2) increased cough; (3) the occurrence of bloody sputa; and of (4) the well-known feeling of oppression, which most chest patients designate by the name of tightness (*Beklemmung*). No attempt was made to analyze separately the effect of weather on chronic disease of the substance of the lung and on simple chronic catarrh. In the case of the rheumatic patients the fact of increased pain was noted.

The number of chest cases observed was fifty-six, and of these thirty-five had chronic phthisis, all except one in the first and second stages; fourteen chronic bronchitis, and seven laryngeal catarrh. There were fifty cases of chronic muscular and articular rheumatism. The chest cases were under observation for seventy-six days, from May 17 to July 31, and the rheumatic 105 days, from May 9 to August 21.

The two sets of parallel observations were arranged in the form of curves, of which Dr. Peters gives a complete analysis in his paper. Photographs of the actual tables can be obtained by any one interested in the subject from E. Tietze, Bad Elster, for 3s. Here we can only give a *résumé* of the main results. In chronic phthisis and chronic catarrhs of the respiratory organs, aggravation occurred on the colder days, and concurrently with a rapid fall in the mean daily temperature. It also occurred with a high atmospheric humidity, with a prevalence of northerly and westerly currents, and (contrary to the ordinary opinion) when ozone, or the substance giving the so-called "ozone reaction," was present in large amount in the air. The days on which no aggravation took place were those with low relative humidity, a greatly diminished mean relative humidity, a prevalence of southerly currents, and a low percentage of "ozone."

In the cases of chronic rheumatism the patients got worse when the mean temperature fell considerably from one day to the next day or days, when the relative humidity and the amount of "ozone" were high, and the wind blew from a westerly direction. They were unaffected, on the other hand, on days of high mean temperature, with a low relative humidity and but little "ozone" in the air. With regard to barometric pressure, the only positive result made out in the chest cases was that in "the majority of the patients their disease was aggravated or much intensified on the days when the pressure was high." No positive conclusion, on the other hand, could be arrived at as to a connection between aggravation of chronic rheumatism and pressure. On the whole, these observations appear to us in conformity with the general experience of clinical observers.—*Med. Times and Gazette*, April 5, 1879.

Effects of Salicylate of Soda in Cases of Articular Rheumatism in Infants.

Rheumatism in children is not only more frequent than in adults; it also assumes a more serious form, because complications from the bowels and the heart are more apt to arise. In children the heart is affected as easily as a joint, and this often accounts for cardiac affections which are met with in the adult, when the patient does not remember having had rheumatism in his childhood. M. ARCHAMBAULT, in his communication to the Société de Thérapeutique (February 12, 1879), speaking on the therapeutic action of salicylate of soda in this affection in children, said that it ought not to be considered as a specific remedy against rheumatism, as quinine is against fever, but it presents a great analogy with the latter, and, what is more, it is quite inoffensive. Children take it well, they seldom vomit it, and its use is rarely attended by the disagreeable sensations of giddiness and ringing in the ears, of which adults often complain. Perhaps this comparative immunity may be attributed to considerable rapidity of elimination in children; salicylate of soda can be detected in the urine from a quarter of an hour to twenty minutes after it has been taken. It is true, also, that it has occasionally been traced sixty hours after the medicine had been absorbed; but as the quantity was exceedingly small, it may be said that in children salicylate of soda does not accumulate. M. Archambault prescribes this drug for children from five to ten years after the following formula: rum, 20 grammes; syrup of lemons, 40 grammes; salicylate of soda, 6 grammes; to be taken in three intervals during twenty-four hours. After the third dose the patient generally feels much better, and after the fourth the pains have almost entirely ceased. This, however, is not the only effect of the drug; it also lowers the temperature, and causes the painful swelling of the joints to disappear. The most important property of the salicylate of soda, however, is that it actually prevents all complications which generally arise through affections of the heart. M. Archambault has used the drug in monoarticular and polyarticular rheumatism, and in treating cases of torticollis arising from the same source, and has always found it answer admirably well. As regards the duration of the treatment, M. Archambault gives the drug in doses of six grammes daily, for three days consecutively, even if the pain should have ceased the second day; then he waits for some time. If the pains should recur, the treatment is repeated, and so on, but it is seldom necessary to give a third dose.—*London Med. Record*, March 15, 1879.

Treatment of Ague by Pilocarpine.

ROKITANSKY'S account of the case is published in the *Wiener Med. Jahrbücher*, page 259, 1878. The patient, a young man aged 22, who was suffering from intermittens quartana, and had been treated during the last twenty-one months for tertiana and quotidiana with quinine, had 16 centigrammes of pilocarpine injected hypodermically. The strength of the solution was two per cent., and it was given two hours before the attack, which was much shorter and slighter than it had ever been before. The next attack due was altogether prevented, but in three days very slight prodromi of a new attack appeared about an hour before their usual time. A fresh injection of two centigrammes was then made, the attack passed away, and there were no more symptoms of fever in the next fortnight. The splenic tumour had also become much smaller, and the patient was dismissed as having entirely recovered.—*London Med. Record*, March 15, 1879.

The Plague.

Prof. VIRCHOW recently delivered a lecture on the plague before the Berlin Medical Society (*Berliner Klin. Wochenschrift*, No. 9, 1879) which deserves special attention, and of the principal points of which the following is an abstract:—

Virchow began by stating that our knowledge of the plague in the light of modern medical science is practically *nil*. The latest and most copious reports on the subject date from the great epidemic in Egypt, and from the Commission of which Bulard, Clot-Bey, and others were members. "The clinical and anatomical methods which the Commissioners used in their investigation were not indeed unsuitable; but they were so imperfect that we are still in doubt what the state of things in Egypt really was." Hence Virchow blames the European Governments, and especially the Russian; for not sending properly qualified men to the places where plague was said to be prevalent, to examine the disease with modern appliances, and in harmony with modern knowledge. The universities of Kazan and Kharkov could have furnished thoroughly trained observers; whereas, in fact, unknown men have been selected for the work. Passing to the plague itself, Virchow points out that we do not even now know whether the buboes so constantly spoken of as a symptom are an integral part of the disease, or whether the very acute forms of plague can occur without them. This, he says, is one of the most doubtful questions, and one on which the old observers were not agreed. Another question is: What is the nature of the change in the lymphatic glands on which the buboes depend? Is it a cellular hyperplasia, or an hyperæmia? May hyperæmia be combined with hæmorrhagic effusions into the gland substance? In fact, is it not probable that in the plague-bubo all the changes occur which we now know to be associated with all acute glandular swellings of whatever kind? Virchow inclines to answer this last question in the affirmative.

We are also in the dark as to why the plague-bubo ulcerates. The best observers of this condition assert that the suppuration begins at the outside of the lymphatic gland, but it is difficult to find an analogous change in the ordinary acute febrile diseases of Europe. It is only rarely that in typhoid fever the mesenteric glands suppurate, but then the suppuration, says Virchow, is within the gland, and the process is identical with the formation of a typhoid ulcer in the bowel. Occasionally suppurating inguinal buboes occur in typhoid fever, but in exanthematic typhus Virchow has never met with them. If we knew that the suppuration originated in typhoid fever and in plague in the same way, we should be justified in assuming some relationship between the two diseases. At present there is a gap in our knowledge which needs to be filled up. Still, in spite of our ignorance on this point, Virchow confesses that he regards the buboes as the most important diagnostic signs of plague. They are present in the great majority of all the cases.

Next to them come the "carbuncle," which are found in about one-fifth of the cases, and which closely resemble those of malignant pustule (*Milzbrand*). Virchow has failed to convince himself that they ever occur in the internal organs. Petechiæ, or rather large ecchymoses, are common in the skin, and still more so in internal organs. These three phenomena—buboes, carbuncles, and petechiæ—are the most prominent symptoms of the plague, in company with severe fever of rapid onset, and soon involving the nervous system. Swelling of the spleen is a less characteristic, but appears to be a very constant, symptom; and the pathological alteration is probably similar to that occurring in other infectious

diseases. Swelling of the liver and kidneys is also described, and may probably be referred to acute parenchymatous degeneration.

In spite of the fact, already mentioned, that buboes are never found in exanthematous typhus, Virchow points out that in the beginning of every epidemic of plague the medical men declare the disease to be typhus. This was the case recently when plague appeared in Kurdistan and Mesopotamia. The Turkish doctors diagnosed typhus; and it was not until Dr. Tholozan, the Shah's physician, took up the matter, that the truth came out. And this brings us to the origin of the epidemic in Astrakhan and on the borders of the Caspian Sea. Some authorities, and chief among them Prof. Hirsch of Berlin, believe that the plague was somehow imported from India, where two forms of it have been met with within living memory: the first called "Palipest," which spread from Cutch and Gujerat in the Northwestern Provinces south of the Indus into the interior, and which disappeared for the last time in 1838; and the second, an endemic plague, first described by Allan Webb, and which is limited at the present day, according to recent report of Dr. Lewis, to two small districts in the Himalayas, not far below the snow line on the borders of Nepaul.

Professor Virchow therefore assumes—and the argument appears conclusive—that the present Eastern plague cannot be the Palipest, which was long ago extinct, nor the endemic plague of North India, which has never been known to break its barriers. His own theory is, that the modern plague has come from Kurdistan and Mesopotamia *viâ* Persia, and has thence reached the Caspian Sea. Whether its transmission has been due to the movement of troops in the late war cannot, he thinks, be at present decided.

And is what has been called the plague really the plague after all? Professor Virchow thinks that, if the reports of suppurating buboes are correct, it is, though the extent of the epidemic has probably been exaggerated. In any case he considers that his own Government was perfectly right to take all precautions possible against the introduction of the plague into Germany. He doubts, however, the possibility of protecting a long *land* frontier by any system of quarantine based on passes and bills of health. "If the Russian officials," he says, "were angels, it might be done, but they are men, and hence fallible." Virchow refers, *en passant*, to the way in which the province of Bari, in the kingdom of Naples, was protected by quarantine in 1815 against the plague, which had attacked the Noya, one of the last places in Europe which suffered from it. Cordons of troops were drawn round the town at widening intervals, and the sentinels had orders to shoot any person who, after a single warning, tried to break through. The historian Schönberg, who relates the story, says the shooting had "a very salutary effect," and Virchow states his own opinion to be that "Border quarantine (*Grenzsperre*) is an illusion unless shooting is allowed."

The practical measures he suggests are—first, to determine whether the returning Russian army is or is not plague-free; and, secondly, in case the plague should reach Germany, to put in force the sanitary measures common to all epidemics, and, while allowing full communication between country and country, to isolate and treat all patients as rapidly as possible. Remembering that the plague has certain analogies to malignant pustule (*Milzbrand*), and that the skin and hair of a diseased beast can retain their infectious power for months, Professor Virchow refuses to admit that clothes, bedding, and such like may not convey the contagion of plague in a similar way. The analogy of malignant pustule to plague, it should be added, he considers so strong that he regards "it as very possible that an organism may be discovered by which the disease is conveyed," though "the search for it has scarcely begun." Lastly, Professor Virchow says a word on disinfection, and, in opposition to Professor Pettenkofer, who has ad-

vised the German Government to rely on sulphurous acid, he recommends that all clothes, linen, wool, rags, etc., shall be subjected to the dry heat of a proper oven, and he recalls Bulard's assertion that *the immersion of infected objects in water* for a few hours destroys the contagion of the plague entirely. On the whole, the impression which Virchow's lecture leaves on our mind is, that there is no great need for apprehending an epidemic of plague in Western Europe. At any rate it is clear that anything like panic is foolish, and Professor Botkin's recent error in diagnosing syphilis as plague at St. Petersburg should warn medical men to keep their heads cool, and not let their fears get the better of their judgment. Professor Virchow will not have spoken in vain if he helps to tranquillize the European public.—*Med. Times and Gazette*, March 15, 1879.

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Athetosis.

Several cases of this extremely interesting and rare disease have of late come under notice (*Soc. Anat.*, Paris, January, 1878; *Upsala läkare-förenings förh.*, Band xii., p. 91, 1877; *Revue Méd. Franç. et Etrang.* January, 1879). In each of them peculiar and characteristic symptoms have been observed. In one case it was even possible to make a *post-mortem* examination; so far as we know, the first time that a necropsy has been made in athetosis.

The patient in this case was a woman aged 32, who had for thirty years suffered from incessant movements of the right hand, forearm, toes, and metatarsal joints, which affections had been brought on by a great fright. The peculiarity in the case consisted in the convulsive movements being limited to the right side, the patient never having had any convulsiform fits, neither had there been any intellectual or sensory troubles. She was a well-built woman, with straight, well-shaped limbs, which did not show the slightest symptom of a paralytic affection. The unilateral movements must therefore have been caused by a single lesion, discovered at the necropsy in the extra-ventricular nucleus of the left restiform body. The lenticular nucleus was occupied in its interior portion by a focus, which contained in its centre a calculus of the size of a French bean. The left cerebral peduncle was smaller than the right, but the lobe was undiminished in size. This might lead to the inference that during the process of cerebral softening a certain number of the lenticulo-peduncular fibres had been absorbed into the focus. The inflammatory process had not gone beyond the lenticular nucleus, and no other lesion could be traced in the brain.

Both the other cases also present several very interesting phenomena. No *post-mortems* have been as yet made in either case. In the one case, the patient, æt. 36, had for some time previously been under treatment for syphilis. Four years before the first symptoms of athetosis appeared the right internal muscle of the right eye became paralyzed. A year later he suffered from violent cephalalgia and nystagmus. Later on there was hemianæsthesia and loss of consciousness, and still later amaurosis of both eyes and paresis of the lower extremities. An examination with the ophthalmoscope showed œdema of the right pupil, combined with gray peripheral degeneration and white atrophy of the left pupil. In the beginning of the following year it was first noticed that the patient's right hand executed involuntary movements of flexion and extension. A fortnight later, successively all the fingers of the right hand began to contract, and in a few months the contractions were executed rhythmically, and consisted in complete extension and abduction, alternating with a slow flexion, accompanied by adduction. The flexion was executed in the metacarpo-phalangeal joints, and there were about one hundred and fifty flexions and extensions a minute. If the fingers were held fast, so as to prevent them from moving, violent movements of

extension and flexion immediately came on in the arm and head. During sleep the twitchings only ceased as long as it was deep and sound, but towards morning, when it was lighter, they came on again, and lasted all through the day. The right forearm was much thinner than the left, but not in the least painful. If the head was not supported it moved horizontally. These movements were even more distinctly seen whenever the patient attempted any voluntary movements.

The third case is even more remarkable, as there is absolutely nothing at all in the previous history of the patient which might give clue as to the etiology of the disease. The gentleman in question, who is a teacher by profession, had always been well; there was no history of syphilis or alcoholism. The only accident he had in his life was a severe scald of the left leg, which happened when he was five years of age. At the age of twenty, when out walking with some friends, they suddenly noticed that both his mouth and face were all on one side. He himself would never have noticed it, as there was neither impediment in his speech nor any other motor or sensory trouble. This slight attack of hemiplegia vanished after two months, during which the patient only applied blisters once or twice. Five years later he began to notice involuntary twitchings in the three last toes of the left foot, which lasted until the present time, and are entirely independent of the volition of the patient. He does not know whether they cease during sleep or not, and they last all through the day. The movements are similar to those we have described above, and consist of a simultaneous extension and abduction, followed by adduction of the three last toes of the left foot; the second toe is also slightly affected. The patient says that he feels the movement vibrating as it were through the whole of the left side, both extremities included. There is a feeling of numbness on the dorsal and plantar surfaces of the foot, as well as a constant tingling, but this does not prevent the patient from walking. The patient was very carefully examined, but not the slightest trace of any disease or nervous trouble could be found. He was perfectly healthy in every respect, and neither motility nor sensibility have ever been abnormal, not even at the time when he had the attack of hemiplegia.

A very curious phenomenon observed was the following. Whenever the twitching toes were slightly stroked near the insertion of the tendons the contractions ceased. The same occurred when the outer side of the leg was slightly rubbed. If we compare these three cases, summing up the individual symptoms, we see that in the first and second cases there may be said to exist an etiology of the disease. The first patient underwent a severe shock to her nervous system through a violent fright, and the second had not only had syphilis but also an attack of paralysis of the lower extremities, complicated with amaurosis. We know from the *post-mortem* results in the first case that there existed an affection of the brain, and may, from the symptoms in the second case, infer that there must also have been an affection of the nervous centres. As for the third patient, the slight attack of hemiplegia which he had had five years before the athetosis showed itself, may be considered as the cause of the disease, which may be classed under the head of post-hemiplegic athetosis. The nature of the lesion of the brain in the first case cannot be clearly defined. It may have been a glioma or a tubercle, which perhaps sprung up at the time when the symptoms of the disease first showed themselves, and was arrested in its growth by some unknown conditions.

The primary cause of the twitchings in this case is not clearly ascertained. Was it the irritation to which the lenticulo-peduncular fibres which passed through the focus were constantly subjected, by the process of degeneration, or were certain fibres belonging to the capsula interna, and which ran along the borders of

the focus, the conductors of the irritation? Was this irritation caused by the cicatrization process going on in the focus or by the calculus contained in the latter?

We are unable to answer all these questions satisfactorily, but we may consider ourselves justified from the facts ascertained in agreeing at least in this case with the school of the Salpêtrière, which looks upon athetosis as a variety of symptomatic chorea.—*London Med. Record*, March 15, 1879.

Treatment of Dolor Fothergilli by Nitrite of Amyl.

The patient, a man aged 60, had never been ill until about four years before he entered the hospital under the care of EISENSTEIN (*Bericht des Wiedener k. k. Krankenhauses*, 1878), when he began to suffer from pains in the right side of his face. The pain came on at first after long intervals, but later on daily; sometimes the patient would have as many as eight paroxysms a day, and as many during the night. He consequently felt very weak and low, and his mental capacities had suffered considerably. During some months he had had daily injections of morphia, which, however, only relieved him for a short time, when the paroxysm would again come on as before. Dry heat occasionally calmed the pains, but the application of ice or cold bandages only increased their intensity. The slightest attempt to touch the branches of the trifacial nerve, which spring from the right foramen infraorbitale and mentale, brought on agonies of pain, during which the muscles of the affected part of the face twitched spasmodically. In the intervals, when the patient was free from pain, the muscles of his lower and upper extremities were in a constant state of tremor. The vital organs were perfectly normal. The patient was treated successively and unsuccessfully with quinine and liq. arsenic. Fowleri. Chloroform inhalations were then tried, and proved successful, in so far as they relieved the patient during the paroxysm, but never cut it short unless kept up till perfect loss of consciousness. As the patient objected to having the nerve resected, inhalations of nitrite of amyl were then resorted to; one drop would cut short the most violent paroxysm. The remedy having been continued for a certain time, the intervals between the paroxysms grew longer, and the patient slept well, gained flesh, and asserted that he had never felt better in his life. As an experiment, tinctura gelsemii was administered during some time in doses of ten drops every two hours, no other medicine being given at the same time. The patient felt pretty well during ten days, after which the tincture gels. proved ineffective, and he again suffered so much that the former treatment had to be again resorted to, and continued for several weeks. The paroxysms would occasionally be absent although for a week, and then, if they came on at all, last a very short time. He was then discharged from the hospital, and presented himself a month later, stating that he was well satisfied with the results of his treatment. The paroxysms came on occasionally, but very seldom, and never lasted long.—*London Med. Record*, March 15, 1879.

Two Cases of Brachial Monoplegia originating from Syphilis.

The following observations on this interesting disease were read by LÉLOIR at the meeting of the Société de Biologie on December 28, 1878:—

CASE I.—R. J., a workman, aged 49, was received on September 4th, in M. Vulpian's ward. The patient denied all syphilitic antecedents. Having, however, been carefully questioned, he stated that, about ten years ago, his hair came off. He did not, on admission, show any symptoms of alopecia. Shortly after this, he began to suffer from rheumatic pains in all his limbs, but he positively

denied ever having had sore throat or any cutaneous eruption. On the inner side of the left leg was a brownish scar of the size of a half-crown piece, which he attributed to a varicose ulceration. However, there were no traces of varices to be found when he came under treatment; but, in the infra-clavicular space there were on both sides a few glands of the size of a nut. It, therefore, seems clear, that the cerebral affection for which he entered the hospital was of syphilitic origin; this supposition was verified subsequently by the good results of antisiphilitic treatment. About a year ago, he began to suffer from frequent headaches, which soon were followed by amblyopia. Four days before entering the hospital, when following his avocation, he suddenly felt very painful formication in the whole of the left arm, including the shoulder. He tried to get rid of this sensation by moving his arm violently up and down, but it grew worse. Two hours later, the left forearm was totally paralyzed and hung motionless and flaccid by his side. The next morning, the patient tried to work, but his left arm still remaining inert, he resolved to enter the hospital. On examination, it was found that the left superior extremity was almost entirely paralyzed; there was no contraction of the arm, although the fingers were slightly contracted. He could scarcely close his hand, and only by great exertion bend the forearm towards the arm; but he could not overcome any resistance, however slight. With the aid of the muscles of the shoulder, he would raise slightly the upper extremity, but it would again fall down. There seemed to be no difference in the circumference of both members; faradic contractility still existed, although slightly lessened. There were no abnormal sensations in the arm, no painful symptoms, and the only thing the patient complained of was a slight sensation of cold in the hand. On comparing the temperature of both upper extremities, a very notable difference could be found; the fingers of the left hand were also slightly cyanotic. The inferior extremities were not in the least affected, neither was there any facial paralysis. There were slight cephalalgia, amblyopia, and ringing in the ears. The patient's intellect seemed intact, although very little developed; he complained, however, that his memory was not so good as formerly.

He was treated with mercury and iodide of potash, and, a week later, a notable improvement might be marked in the movements of the left arm. He could grasp objects firmly, and feel much stronger, when, suddenly, a violent attack of headache came on. The pain was principally felt in the frontal region, specially on the right side, and in the right parietal region. The pain was aggravated by percussion. A week later, the headache had vanished, and, in three more weeks, the patient left the hospital with only a very slight difference between both extremities.

CASE II.—F. A., carrier, was received into the hospital on November 26, 1878. About fifteen years previously he had contracted a chancre, followed by sore throat and cutaneous eruptions. He then recovered, and was quite well till four years ago, when he was laid up with inflammation of the lungs. He had scarcely recovered, when he began to suffer from violent headaches, followed, after some months, by insensibility and wasting of the right arm. When this limb was entirely paralyzed, the patient entered a hospital, and was put under antisiphilitic treatment, and galvanized. A few months later, he left the hospital, although his right arm was still weak. Some time after, he was suddenly seized with the prodromi of a miliary tuberculous eruption, admitted into M. Vulpian's wards, and died there after the lapse of a fortnight. It is to be noted that this patient, also, had never had any convulsions or contractions of the right arm, and that both the face and the right leg were perfectly intact. There had not been any sensory troubles in the affected extremity, nor was the faradic con-

tractility lessened. The right arm was very thin, while the muscles of the left were well developed.

Necropsy.—The lungs, the cerebro-spinal sheaths, and the digestive canal, were found to be covered with miliary tubercles. The brain was free from them, but, on the surface of the left hemisphere, about five millimetres from the longitudinal fissure, and on a level with the middle portion of it, the dura mater was considerably thickened over a space of the size of a sixpenny piece. This thickening did not adhere to the bones of the skull, and, having been dissected carefully out, was found to consist of the three cerebral meninges, which were united into a patch the size of three millimetres, having a rugged surface and presenting a grayish and sclerotic appearance. The meninges which surrounded this spot to the extent of three millimetres, were of a whitish colour and slightly thickened. The patch adhered firmly to the brain-substance, so that it could not be removed without carrying away the whole of the gray matter, and about one millimetre of the white substance, which were directly underneath it. It corresponded exactly to the upper third of the ascending frontal convolution.

Microscopic cuts having been made of the patch, it was found to be of sclerotic consistency, and of a dull grayish colour. In the centre of the cut was a thin yellowish line about a quarter of a millimetre thick and three millimetres long. This was the only lesion which could be traced. The other membranes of the brain did not show any alterations, except the miliary tubercles. The bones and arteries of the skull were healthy, and there was a considerable œdema of the cerebral substance. Although the right arm had been considerably atrophied, the anterior roots of the nerve of the paralyzed side did not appear atrophied, neither was there any degeneration of the nerve tubes, either in this nerve or in the nerves of the brachial plexus of the corresponding side, and in the inframuscular nerves. The muscular fibres also appeared healthy.

REMARKS.—Both cases offer such analogies from a clinical point of view that they may be pronounced to arise from similar causes, as the necropsy of the first patient would doubtless have shown. Violent headaches preceded in both patients the monoplegia, which comes on suddenly without any symptom except a progressive torpor of the superior extremity in the course of a few hours. In both cases, there was no facial paralysis, neither was the corresponding inferior member paretic. There never were any transitory contraction or partial temporary convulsions; and, in the second case, where the paresis lasted nearly four years, no secondary contraction was observed. In both cases, the sensibility was not disturbed, and in the first, it may be observed that the temperature of the paralyzed side was lower than that of the other.

From an anatomo-pathological point of view, the second case offers us one of the most remarkable instances of cerebral localization, as we see here how a circumscribed patch of a gummatose cerebral sheath, which occupies a small portion of the cortical cerebral substance on a level with the upper part of the left ascending frontal convolution, may cause a monoplegia of the right arm.

This experience tends to verify Professor Charcot's opinion, that the motor cortical centres for the extremities of the opposite side are located in the two superior thirds of the ascending convolutions, and specially in the ascending frontal convolution. It is, however, worth noticing, that the lesion existed in the superior third of the ascending frontal convolution, and not in its middle portion, where, according to Professor Charcot, the cortical centre of the isolated movements of the upper extremity would be found.—*London Med. Record*, March 15, 1879.

Case of Brachial Monoplegia.

At the meeting of the Société de Biologie, of January 25, M. RAYMOND stated the following case. A young man, aged 20, suddenly fell down in September last in an apoplectic fit. When he recovered consciousness he found that he could no longer make use of his right arm. He subsequently put himself under M. Raymond's treatment, who diagnosed the existence of brachial monoplegia, complicated with an absolute loss of sensibility. The application of various metals, magnets, and electricity had no effect on it, neither was M. Raymond able to modify the insensibility. The question is now what could be the reason of this phenomenon? Was it a cerebral or a medullary lesion? It is, however, well known that the distance between the centre of motility and that of sensibility of the upper extremity is considerable, and this fact makes the question still more complicated. There is no history of syphilis, and besides, immediately after the fall, no ecchymosis or symptoms of lesion of the brachial plexus could be found. The patient has been put under M. Vulpian's treatment, and it seems as if on the continuous application of electricity he began to recover gradually the sensibility of his arm.—*London Med. Record*, March 15, 1879.

On the Rapid Cure of Asthmatic Attacks by Hypodermic Injections of Morphia and on the Eupnoeic Action of the latter.

Although the sedative effect produced by hypodermic injections of morphia in cases of asthmatic attacks, or of certain paroxysms of dyspnoea, has been well known for a long time, yet most practitioners prefer to employ preparations of belladonna or datura, because they do not tend to diminish the bronchial secretions. M. HUCHARD, having studied carefully the effects of, and the objections to, the use of morphia in asthma, has come to the following conclusions. In the most intense attacks of asthma a hypodermic injection of morphia will cause immediate relief. He even goes so far as to affirm that if these injections are repeated, they will, by cutting short each attack at its beginning, succeed in rescuing the economy from this spasmodic habit, and thereby cure the disease. After giving a short historical sketch of his subject, M. Huchard proceeds to study carefully the different forms under which asthma can show itself: he compares pathological facts with the results which have been obtained from the therapeutical study of preparations of morphia, and in this way, succeeds in explaining theoretically facts which he had learned empirically from clinical experience.

In another part of his work, M. Huchard enters fully into the importance of administering morphia preparations hypodermically in other cases of dyspnoea, such as cardiac asthma or uramic dyspnoea. In a third chapter he dwells upon the different results produced by morphia preparations, according to whether they are given hypodermically or by the mouth. He sums up his exhaustive and interesting study by the following words: Morphia makes one breathe freely.—*London Med. Record*, March 15, 1879.

Pulmonary Emphysema in Tuberculosis.

There are three principal forms of emphysema. It is acute in acute and chronic tuberculosis; partly chronic in phthisis, accompanied by ulcerations; and universally chronic in latent tuberculosis. According to the author, defective nutrition is one of the most important causes of emphysema, and he quotes in support of this view several authorities on the subject; among others M. Granchet, who proved it by several examples of emphysema, which had followed atrophy and partial destruction of the lobules in chronic tuberculosis. This latter etiology is very

important, because, as M. HIRTZ observes (*Thèse de Paris*, 1871, *Gaz. Méd. de Paris*, No. 1), its development has always been noticed in tuberculous patients where there was predisposition to arthritis. It must, however, not be forgotten, that general chronic emphysema, whether it be primary or secondary, is always in a certain way antagonistic to tuberculosis. M. Hirtz has also several times observed a fever of a peculiar type, which was regularly repeated after four or five days.

The diagnostic symptoms of the disease, such as hæmoptysis, loss of flesh, etc., are well known. It must, however, always be borne in mind that it is very easy to err by mistaking latent emphysematous tuberculosis for constitutional emphysema. Great importance should also be attached to the characteristic respiration of emphysema.—*London Med. Record*, March 15, 1879.

Venous Pulsations in Consumption.

Professor PETER has observed repeatedly in consumptive patients a peculiar phenomenon, which may be considered as being prognostically important. It is a form of venous pulse, which he has described in a paper addressed to the Société Clinique, and subsequently published in the *France Médicale*. He observed it for the first time in a woman who had reached the last stage of tuberculosis; the veins on the dorsal surface of her hand were bluish, hard, tortuous, and pulsed visibly. The pulsations were still more distinct if the wrist was compressed so as to hinder the venous circulation; they could, however, be better seen than felt, because the impulse of the venous wall does not beat against the finger in the same way as the arterial. The pulsations could, therefore, be counted with the eye, and were found to be synchronous with the arterial pulsations. M. Peter has since met with this phenomenon, though not each time under analogous circumstances. How was it caused? It was clear that it could not be the same thing as the ordinary venous pulse, because it did not exist in the heart, and also if the arm were compressed between the heart and the hand, it was exaggerated instead of being suppressed, as must inevitably have happened if the venous blood had come directly from the heart. The blood, therefore, came from the left heart, and not from the right. In order to explain this venous pulse, M. Peter thinks that the muscular fibres of the arteries in certain individuals who are half asphyxiated, as is the case with those patients who are paralyzed through the excess of carbonic acid which is contained in their blood, and in this way allow the fluid to enter directly into the capillaries without putting any obstacle to this continuous transfer of blood. The other agents which help to form this pulse are the frequency and energy of the pulsations of the heart. During the last moments of life, when the pulsations become feebler, the venous pulse disappears. This phenomenon, as we have said before, is rare, but when it exists it is very important, being a sign of quickly approaching death.—*London Med. Record*, March 15, 1879.

On Cheyne-Stokes' Respiration.

In a short note additionnelle sur quelque points particuliers du phénomène respiratoire de Cheyne-Stokes, Dr. C. BIOT merely insists upon the truth of the views he has expressed in two previous papers upon the phenomena associated together under the name of Cheyne-Stokes' respiration. It is especially written as a reply to the criticisms that have been passed upon his former papers. He accepts as true the statement of M. Filehne that the phenomena of Cheyne-Stokes' respiration can be produced experimentally by hindering and promoting successively the afflux of arterial blood to the brain. Dr. Biot especially empha-

sizes the great distinction between true Cheyne-Stokes and other more or less irregular respiratory rhythms; it is the gradual diminution of the amplitude with lengthening of the expiratory period before the apnoea,¹ and of the gradual resumption with increase of the amplitude and acceleration of the movements after the pause, which is so especially characteristic of Cheyne-Stokes' respiration. Two tracings are given to illustrate this, one from a case of Cheyne-Stokes' respiration, the other from a case of irregular respiratory rhythm occurring in meningitis. With regard to the arterial tension during the two conditions of apnoea and hyperpnoea, the author states that the tension is diminished during apnoea, and increased during hyperpnoea, and that following Marey's law that the frequency of heart-beats is in inverse ratio to the arterial tension, the heart-beats are frequent during apnoea and infrequent during hyperpnoea. In his previous paper the author stated as the result of experiments upon himself that the voluntary production of apnoea produced an increased frequency in the pulse-beats; this statement has been regarded as hypothetical by some of his critics, who had failed to obtain similar results, and to his surprise, on repeating his observations many times, failure occasionally occurred also to him. A law has been discovered, however, which explains the apparent contradictions; if one ceases to respire, the thorax being in a state of inspiration, there is generally a slowing of the cardiac rhythm; if, on the contrary, one fixes the chest-walls in expiration, the heart-beats are always accelerated. Dr. Biot draws attention to the fact that in Cheyne-Stokes' respiration the chest-walls are always fixed in a state of expiration, and therefore the cardiac-beats are increased in frequency; he takes this opportunity of modifying his previous statement as to the effect of voluntary apnoea in modifying the cardiac rhythm, and adds to his former statement that during the period of cessation of respiration the thorax must be in a state of expiration. Concerning the etiology of this phenomenon Dr. Biot maintains his former statement: "We believe we have demonstrated that the essential conditions determining the occurrence of this symptom are—a diminution of the excitability of the medulla—a cerebral phenomenon, having for its origin an anæmia progressive, and more or less profound, a circulatory phenomenon." He further adds that in all the cases he has met with, aortic regurgitation existed, with or without contraction of the orifice. Referring to a recent thesis by Dr. Cuffer, in which it is contended that the phenomenon is due to uræmia, he remarks that supposing uræmia to be due to spasm of the cerebral arteries, and therefore to anæmia of the brain, it would be explained by his view of the etiology of the condition; on the other hand, he affirms that he has many times seen it in cases which had not a trace of albumen in the urine.—*London Med. Record*, March 15, 1879.

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Sudden Arrest of the Circulation in the Superior Vena Cava in a Case of Aortic Aneurism.

The patient, a cabman (*Gazette Hebdomadaire de Médecine et de Chirurgie*) was admitted into the Hôpital St. Antoine under the care of M. DUJARDIN-BEAUMETZ, having been suddenly seized with cyanosis and great dyspnoea. He had suffered for some time from pain in the right subclavicular region, and his expectoration had been occasionally tinged with blood; but there was no cause to which he could refer this sudden attack, and he had been following his occupation up to the time of his admission. His body presented a curious aspect; the upper part, the trunk, the head, the upper limbs, in short, all that part whose

¹ The term "apnoea" is here used in the physiological sense, indicating a highly arterialized state of the blood; it has not its ordinary clinical meaning.

venous system is tributary to the superior cava, was of a bluish hue, while the lower part, the abdomen, and lower limbs were of a normal colour. The cyanosed parts were swollen and oedematous, particularly the face and upper extremities; the veins of the neck were distended. In the sixth, seventh, and eighth left intercostal spaces chains of varicose capillaries were very evident, obviously of some standing and pointing to a long existing obstruction in the venous return. Over the upper part of the abdomen on the right side, the subcutaneous veins took the form of large, varicose, venous cords, showing that much of the blood which should find its way back to the heart by the superior cava was returned by the inferior cava.

Examination of the chest revealed an area of dullness extending in front from the clavicle to the fourth interspace, and behind to a corresponding extent in the scapular and subscapular regions. Over this area a very loud, harsh systolic murmur was heard, almost completely drowning the breath-sound, which was very indistinct. The same murmur was heard, though very feebly, at the cardiac apex, but loud and harsh along the course of the aorta. Expansile pulsation opposite to the second, third, fourth, and fifth right interspaces. Both upper extremities are very dense, large, and painful, and of a pale bluish colour. Voice feeble, hoarse respiration difficult. The cyanosis diminished greatly after a few days in hospital (axillary temperature lowered, right side 35.2 Cent., left side, 34.6 Cent., in rectum 37°), but soon returned, and notwithstanding leeches behind the ears and bleeding from the right jugular vein, increased in intensity. The face became bloated, the complexion blue, with reddish patches, lobules of ears cold, eyes injected and weeping, voice stifled. The back, which had remained nearly of normal colour, became blue also, with patches of varicose capillaries, like those on the front of the chest; but here, as in front, the blue colour terminated abruptly at the base of the thorax. Four days before the patient died (he died twelve days after admission) a curious murmur was heard close to the spine on the right side, opposite the ninth, tenth, eleventh, and twelfth interspaces. It was a well marked continuous bellows-sound, intensified at each systole. It was not audible above the ninth interspace, nor on the left side of the spine.

The autopsy revealed the existence of an aneurism as big as the fist at the commencement of the aorta; along its posterior wall was the vena cava, completely compressed by the aneurismal sac; it contained no clot, but its walls were so thin and fragile that it was very difficult to pass even a small probe through the vessel without lacerating it. The clot which had led to the complete obstruction of the venous circulation of the upper part of the body, was found in the vena azygos, which was enormously dilated, and obviously replaced the superior cava. This vein appeared directly continuous with the brachio-cephalic trunks. Lower down it became much smaller, and on the level of the eleventh dorsal vertebra was diminished about one-fourth in diameter; here it divided into several branches connected with the lumbar veins, and did not join directly the vena cava inferior. About its middle third a clot was found, from 5 to 6 centimetres in length, of a yellowish red colour, and softish consistence, easily detached from the walls of the vein, which were unaltered. It is easy to understand that the result of this clot was the same as if it had been placed in the superior cava, for it was wholly due to this vast supplementary circulation that the patient had been able to live so long without grave symptoms. It was a question whether the soft bellows-sound heard at the base of the thorax on the right side of the spine was due to the changes in the azygos venous circulation (it ceased a few days before death), or whether it was an aneurismal murmur transmitted along the vertebral column.—*Lond. Med. Record*, March 15, 1879.

Acute Hemorrhage into the Pancreas.

Dr. HILTY, of St. Gallen (*Schweiz. Corr. Bl.*, vii. 22, 1877) relates the following case. A mechanic, 30 years of age, well built, muscular, given to alcohol, died after two days' illness with symptoms of acute gastritis, blood-poisoning, and perforation of the intestine. At the *post-mortem* examination any trace of peritonitis was absent; on the contrary, the neighbourhood of the pancreas showed an abundant infiltration of blood. The gland itself was double its ordinary size, of tough consistence, and dark red coloured. From the interlobular connective tissue much bloody serum flowed on section. Behind the head of the pancreas were small hemorrhages; the duct was not dilated. The corresponding renal vein appeared swelled and filled with blood-clot. Spleen and kidneys hyperæmic. Stomach dilated, the mucous membrane thickened; ecchymoses in the cardiac end and lower part of the œsophagus. Liver voluminous, fatty. Much fat on the enlarged heart; muscular fibres soft, somewhat fatty. Brain congested. Ventricular fluid turbid.—*London Med. Record*, March 15, 1879.

A Case of Traumatic Rupture of the Spleen.

LOWENSTAMM records (*Med. Chir. Centralbl.*, January 31, 1879) the case of a strong-built woman, aged 38, who had been living for some time previous in a place where malaria reigned, and suffered for a long time from often repeated attacks of tertian fever. She then left the place, but was still subject to frequent attacks of malaria varying in type, looked very pale, and complained continually of a pain in her left side. One day, when working in a brick-kiln, a large mass of earth suddenly detached itself, and, falling upon her, buried her. She fell on her right side, and the whole weight of the earth rested upon her left side. She was immediately exhumed, but complained of a severe pain in the left hypogastric region, had nausea, and vomited even the water which had been given her to drink. Her pulse was small and frequent, her abdomen much enlarged, but she had not lost consciousness. She was immediately put to bed, and fomentations of ice-water applied, together with soothing remedies, but with no result. Her abdomen was more and more inflated, and the increasing pallor and low temperature of the body, as well as the collapse, made it certain that both the spleen and capsula of the spleen had burst, thereby allowing the blood to escape freely into the abdominal cavity. The patient lived for two days after the accident, being treated with opium and hæmostatics. She died of peritonitis and exhaustion. At the necropsy it was found that the spleen had burst asunder almost in the middle; there was also a slit of about one inch in the capsula, and a coagulum weighing about five pounds lay in the abdominal cavity. The latter presented all the characteristic changes of peritonitis. The spleen was hypertrophic, soft, and weighed 1 lb.—*London Med. Record*, March 15, 1879.

Case of Dislocation of the Spleen.

WASSILJEW records (*Petersb. Med. Woch.*, 1878, No. 40) the case of a naval officer aged 36, who had lived for several years in a place where malaria prevailed, and had there acquired intermittent supraorbital neuralgia accompanied by chills, and followed by heat and perspiration. Subsequently he became dyspeptic, and about fifteen months after the first symptoms of the disease had shown themselves, a tumour in the abdomen was accidentally discovered. It was not sensitive to pain, occupied the left superior part of the abdomen, but sloped down towards the right side and could be felt about one-and-a-half inches beyond the linea alba. The surface was smooth and the tumour could be easily moved.

During the attacks of fever it increased in size and became hard, but decreased and softened in the intervals. At first the patient did not feel much inconvenience from it, but gradually it began to cause him so much suffering, that he felt depressed, and attacks set in which might almost be termed hysterical. His digestion was also much impaired; and last, not least, the urinary organs became affected; he had a strong desire to micturate, combined with a decrease in the quantity of urine which was passed, and pains in the region of the left urethra. At the present time the tumour has sunk more towards the right and downwards; measuring on the right and above the umbilicus about four inches, on the left three, and below two inches. Its shape is oval, with an incision on the lower border; it feels like a solid consistent mass with smooth edges, and is pretty freely movable, adhering only slightly to the abdominal walls. Only in one place, on the left, can crepitation be detected, and the tumour is tender on pressure. If palpated or faradized it grows notably smaller. There is no splenic dulness. The ninth and tenth intercostal space on the left are flatter than on the right; at every deep inspiration they are drawn deeper inwards than on the right. The colour of the blood is not so dark as it should be, although no increase of the white blood-corpuscles can be detected. The quantity of urine passed daily is 2500 centimetres; specific gravity 1012; no albumen; acid reaction; but it contains a considerable sediment of phosphates and urates. The entire left side is less sensitive to electric thermic and tactile stimuli than the right, especially the lower extremity; this difference decreases, however, gradually towards the upper part of the body, and is very slight in the superior extremity.

During the patient's stay in the hospital the spleen was treated with the faradic current and decreased in size. The patient also felt much better. On leaving the hospital he was advised to go on stimulating the spleen methodically by electricity, or the application of ice or cold water, combined with antifebrile medication, such as arsenic, quinine, and eucalyptus with iron.—*London Med. Record*, March 15, 1879.

Diabetes complicated by Symmetrical Gangrene of the Skin of the Plantar Region.

Dr. MAGNIN has published in the *Journal de Médecine* for June, the following case: The patient, aged 64, who had always led a very active life, and enjoyed good health up to 1871, then began to suffer from diabetes, the urine containing 54 grammes of sugar per litre. He was treated for it, and did not suffer much till 1876, when, having taken cold, he was laid up with facial erysipelas; the urine at that time still contained a small amount of sugar. In 1877 he suffered from hæmoptysis and a bad cough. Cod-liver oil, alcohol, and tar were given, and the hæmoptysis decreased considerably, although it did not cease completely. The cough, however, could not be got rid of, and was very troublesome, especially in the morning. A few crepitating râles could be heard several weeks after the cough had first begun; they were considered as symptoms of a congestion of the lungs, and treated accordingly. The patient again improved in health, gained flesh, and, with the exception of an attack of intermittent fever, which was cured by arsenic and quinine, nothing abnormal was noticed during the year. In February, 1878, the body of the patient, especially the chest and lumbar region were covered with large patches of pityriasis versicolor. This same eruption had occurred a year previously, and disappeared as it did this time, having been treated with sulphur ointment. In March the patient was greatly alarmed by observing that a symmetrical series of purplish spots of the size of a pea, had spread over the planta of both feet, especially of the right one. This eruption was very tender on pressure, and gave great pain, not only

when the patient attempted to walk, but also when he was resting. He described the pains, when lying down, to be of a lancinating kind, similar to an electric shock, equally rapid in their appearance and disappearance. The physician suspected diabetic gangrene, and treated the patient with local applications of quinine and arsenic, and internal administration of quinine and astringents, to counteract the frequent hemorrhages from the nose and mouth. Absolute rest and a very strict regimen were also prescribed. The symptoms, however, grew worse; the patient could hardly walk with the pain, which radiated to the malleoli. He described it as like having a screw driven into his foot. The affection progressed rapidly, the spots on the right foot being of a purple hue, and the skin having a macerated appearance. As a last expedient, Dr. Magnin resolved to try local oxygen baths, without, however, having much faith in them. They were administered by drawing over the right leg and foot a rubber tube, into which oxygen was conducted. The patient took a bath of half-an-hour during the first day, but without experiencing any relief. The foot was very red, and perspired abundantly. The treatment was continued for twelve days, after which time all traces of the purple spots and the pain had disappeared. The patient still suffers from diabetes, but is comparatively healthy, and able to attend to his business.—*London Med. Record*, March 15, 1879.

Pathological Conditions of Albuminuria.

RUNEBERG has summed up the results of his observations as follows, in the *Deutsches Archiv f. klin. Med.*, vol. xxiii. Nos. 2 and 3, 1879. The transudation of albumen into the urine always takes place in the Malpighian bodies, and is due to an increased permeability of the walls of the convoluted tubes and their epithelial lining. The particles of albumen which are suspended in the blood-serum, and which, under normal conditions, cannot transude through the membranes of the Malpighian bodies, are washed through them, together with the other constituents of the urine, and mix with the latter.

In a healthy kidney this increased permeability is due to a considerable decrease in the difference between the blood-pressure within the Malpighian bodies, and the counter-pressure within the urinary tubuli. Here, therefore, the albuminuria would only be accidental or transitory, and may, according to what has been said, be ascribed either to a considerable decrease in the blood-pressure in the Malpighian bodies or to an increase in the pressure in the urinary tubules, or to both causes combined. If the albuminuria should, however, persist, then the increased permeability of the membranes must be ascribed to some degenerative or suppurative process within the convoluted tubes of the Malpighian bodies; here, too, pressure has a marked influence on the permeability of the lining, and consequently on the amount of albumen contained in the urine, in the same way as has been quoted above. Certain kinds of the albuminous bodies, such as egg-albumen and hæmoglobine, are transuded much more easily than serum albumen. If, therefore, these substances have been mixed in some way with blood serum, they immediately transude into the urine like dissolving salts, even if the blood-pressure should be normal and the kidneys healthy.—*London Med. Record*, March 15, 1879.

Treatment of Albuminuria by the Inhalation of Oxygen.

At a meeting on January 8 of the Société de Thérapeutique, M. DUJARDIN-BEAUMETZ read a paper on a case of albuminuria in which the albumen had entirely and rapidly disappeared after some inhalations of oxygen. The patient had reached the last stage of the disease; every diuretic had been employed, but

without success, when inhalations of oxygen were resorted to. The albumen disappeared within the following twenty-four hours, and had not reappeared since. Twelve days had elapsed, and the author wished to know if similar cases had been observed before, and if his treatment might be considered as attended by permanent success.

A discussion having been raised on the subject, it was remarked that similar cases had been known to occur, only the effect of the cure had never been permanent, the albumen generally reappears after two or more months.—*London Med. Record*, March 15, 1879.

Intra-abdominal Chylous Effusion.

Professor WINIWARTER of Liège reports in the *Medicinisch-Chirurgisches Central-Blatt*, No. 1, 1879, the following case, which was observed at the Children's Hospital in Vienna in 1876, and is described as one of "chylangioma cavernosum in abdomine."

The patient was a weak female infant aged four months, whose abdomen, immediately after birth, was noticed to be very prominent. The infant took the breast freely, and increased slowly in size. The abdomen continued to swell, but no other symptom, save a tendency to constipation, was manifested until the fourth month, when the abdominal swelling had increased so much as to interfere with respiration. At the same time, the little patient suffered much from vomiting and distension of the intestines by gas, and was much constipated. When first seen by Professor Winiwarter, her body was much emaciated, and her face cyanotic. The abdomen was enormously distended, and measured 65 centimetres in circumference. The anterior abdominal wall was very thin and tense. There was a well-marked tympanitic sound in front of the abdomen, and a dull sound in each flank. The swelling was not quite symmetrical, as a distinct projection could be observed in the right hypochondrium. There was no œdema of the lower extremities, and the urine did not contain albumen. As the case was clearly one of a collection of free fluid in the abdominal cavity, a puncture was made with a trocar and canula on the left side, and vent given to 3 litres of a fluid which, to the surprise of Dr. Winiwarter, closely resembled fresh milk in colour, consistence, and even smell. The abdomen was much reduced in size through this operation, and considerable relief was afforded, although the intestines remained much distended, and a well-marked tumor still existed near the region of the liver. This tumour, on deep palpation, felt like a mass of conglomerated cysts. It seemed to be fixed to the front of the spine, but evidently was not adherent either to the liver or to the anterior wall of the abdomen. The fluid, on microscopical and chemical examination, was found to be pure chyle. In consequence of rapid and repeated accumulation of the swelling, the abdomen was tapped after an interval of a month, in November, and again in the following December and January. At each of these operations, about 3 litres of chyle were removed. The patient subsequently passed from under the notice of Professor Winiwarter.

In some remarks on this case it is stated that an effusion of chyle within the peritoneal cavity can occur only through transudation or through a solution of the continuity of some large lymphatic vessel. Cases are on record in which, after compression or plugging of the thoracic duct, a milky fluid collected in the pleural cavities and within the abdomen. Such cases as these can be readily explained. In these instances, the milky fluid was never effused in large quantities, nor was there ever a continuous and rapid accumulation. It has been proved by *post-mortem* investigations that, in cases of this kind, the lacteals soon become impermeable, in consequence of inspissation of the stagnant chyle, and that the effusion of milky fluid soon ceases. The phenomena in the above recorded case indicate

that there was no obstruction to the flow of chyle from the whole intestinal tract. Professor Winiwarter, in considering the relation of the tumour in the right hypochondrium to the collection of chyle within the abdomen, formed the following hypothesis as to the nature of his case: congenital occlusion of the thoracic duct, formation of a compound cystic tumour through distension of the lacteals at the root of the mesentery by obstructed chyle, rupture of one of the cysts before or during birth, persistence of this solution of continuity, and unceasing effusion of the chyle absorbed by the intestines. That cystic dilatation of the abdominal lymphatics may be readily produced, has been proved by the experiments of Wegner, who, after repeated injections of air into the peritoneal cavity of the rabbit, found at the autopsy large cyst-like swellings containing air at the root of the mesentery. The fact that this child lived and increased in size, notwithstanding a supposed occlusion of the thoracic duct, is accounted for by the view that there was very probably a reabsorption of the effused chyle by the lymphatics of the peritoneum and central tendon of the diaphragm, and also by the bloodvessels.

This interesting communication concludes with references to previously reported cases of abdominal chylangioma, and with a full report of the analysis made by Professor Ernest Ludwig of the effused chylous fluid.—*London Med. Record*, March 15, 1879.

Syphilitic Muscular Contraction.

GUIBOUT (*L'Union Médicale*, January 4, 1879) describes the case of a man, aged 49, under his care, in the Hôpital Saint Louis, who had always enjoyed good health till the year 1853, when he contracted syphilis. Although no general treatment was followed, he had no further trouble until 1872, when he had a severe attack of laryngitis, which subsided under iodide of potassium, but left a permanent hoarseness. In 1873, he was under the care of M. Hardy for syphilitic ulceration of the legs, of which the cicatrices still remain. About the same time, also, began the muscular affection from which he still suffers. No other accident appeared until September, 1878, when some small gummata were noticed in the frontal and parietal regions. About five years ago, sharp pains in the left arm, from the shoulder to the elbow, and especially severe at night, were first felt; and, at the same time, the patient said, there was some weakness of the limbs. From that time the pain continued, with intermissions, until October, 1878, the date of his admission into the hospital under Dr. Guibout.

On examination, the left biceps seemed somewhat wasted, and the circumference of the middle of the arm during relaxation of the muscle was $1\frac{1}{2}$ centimetres less than that of the right; but, during muscular contraction, the difference was $2\frac{1}{2}$ centimetres. The left forearm could not be completely extended, and, at the fold of the elbow, was a prominence formed by the tendon of the biceps, which felt hard, like a stretched cord. The distance from the coracoid process to the bicipital tuberosity of the radius was 3 centimetres less on the left than on the right side. The muscular portion of the biceps appeared, excepting the slight wasting, to be quite normal; the shortening, as well as the hindrance to complete extension of the forearm, seeming to be exclusively due to contraction of the tendon. No other muscles were affected. There was syphilitic osteitis of the lower third of the left humerus. Under doses of 2 grammes (30 grains) of iodide of potassium, gradually increased to 4 grammes (60 grains), the whole of the lesions had greatly improved by December 3.

Muscular contraction is a rather rare manifestation of syphilis, and belongs to the tertiary stage. In this case, the tendinous portion of the muscle was involved, which agrees with Notta's views on the subject; while Bouisson, of Montpellier,

considers the muscular portion to be more often attacked. All observers agree that the biceps is the muscle most frequently affected.—*London Med. Record*, March 15, 1879.

Cure of Dog Bite by Aspiration.

SAPOLINI publishes in the *Gaz. Med. Ital. Lomb.*, February, 1879, the following treatment for hydrophobia. Immediately after the patient has been bitten, the virus must be repeatedly aspirated by means of a syringe, alternating with frequent injections of tepid water into the wound. He asserts that in this way the wound is completely cleansed from the poison. During the period of incubation the wound must be kept open, frequently by aspiration, and some antiseptic fluid injected, such as salicylic acid, etc. The patient must also take salicylic acid internally. During the period of hydrophobia another powerful poison must be injected hypodermically, *e. g.*, the poison of the viper, or some other venomous serpent.—*London Med. Record*, March 15, 1879.

Surgery.

Removal of a Subretinal Cysticercus: Preservation of Sight.

A woman, aged 26, came under the care of Dr. HERMANN COHN (*Centralblatt für prakt. Augenheilkunde*) some time after disturbance of vision had appeared in the right eye. On examination, there were seen to be numerous punctiform and flocculent turbid spots in the vitreous body. To the lower and inner side of the pupil was a bluish-gray vesicular detachment of the retina, projecting into the vitreous body; beneath was a large vein, a small branch of which passed upwards to the vesicle. In the interior of the vesicle, about the middle, was a clear white spot. The vesicle was oval transversely and sharply defined, and had the peculiar glitter of a hydatid. On repeated examination, changes in the length of the vesicle and slight contractions were observed. The diagnosis was subretinal cysticercus. The following operation was performed without anæsthesia. Four millimetres (0.16 inch) from the outer edge of the cornea an incision, eight millimetres (about one-third of an inch) in length, was made in the conjunctiva, from above downwards. The wound having been widened as much as possible, a thread was passed through the external rectus, which was divided at some distance from its insertion. The eyeball was now rolled inwards, and the sclerotic was opened with a von Gräfe's cataract knife, to the extent of about one-third of an inch. A little vitreous humour and a trace of blood escaped. The vesicle, which was of the size of a lentil and uninjured, was now drawn out with iris forceps. There was almost no hemorrhage, nor any disposition to spontaneous prolapse of the vitreous body. The muscle was not accurately sewn together, and two sutures were applied to the wound in the conjunctiva. A compressive bandage was employed, and rest in the dorsal position rigidly enjoined. The reaction was limited to pain lasting two days, and a subsequent mild attack of iritis. Ophthalmoscopic examination on the seventh day showed the vitreous body to be clearer than before; the position of the hydatid was indicated by a white shining spot, over which the retinal vessels ran evenly. Ten days after the operation, the patient was discharged, the vision being $\frac{5}{6}$, and the tension of the eye normal.—*British Med. Journal*, March 1, 1879.

Teeth Grafting.

Two interesting papers were presented to the Académie des Sciences at its meeting on January 6th (*Comptes-Rendus*, 1879, No. 1), by Dr. MAGITOT, and by one of his pupils, Dr. DAVID. Dr. Magitot, after advertising to his former communications relating to grafting of the dental follicles in certain species of the mammalia, states that in the present paper he carries the subject very much farther, embracing grafting the adult dental organs, and supplying practical applications.

"There are," he observes, "three varieties of dental grafting—1. By *restitution*, in which the tooth removed from its alveolus is restored to it, either immediately, or after a variable period of time. 2. In grafting by *transposition* a tooth is removed from one alveolus, and transplanted into another, whether in the same or in a different subject. 3. In *heterotopic* grafting, the teeth are grafted on various parts of the body other than the jaws, examples of which are recorded as resulting from the experiments of Hunter, A. Cooper, Philipeaux, etc." In the present paper Dr. Magitot confines himself to grafting by restitution, combined with the excision of the diseased parts before restitution is made. His researches on this point were first published in the *Gazette des Hôpitaux* for 1875; others have been published in the theses of his pupils, Drs. David and Pietkiewicz; and the operations of this kind have now reached the number of sixty-two. Of these sixty-two cases, fifty-seven have been definitively cured, a great number of these cures dating back from two to two and a half years. The age of the patient does not seem to have exerted any influence on the results, and the various kinds of teeth have been alike excised and grafted. The surgical indication for grafting combined with excision is essentially based upon the diagnosis of a special lesion characterized by *chronic periostitis* of the summit of the fang of the tooth—i. e., inflammation of the periosteum, denudation and necrosis of the subjacent cement, and absorption of the ivory. It is a kind of mortification of the root. The morbid process which results consists in a series of accidents, as phlegmon of the gums and face, denudation and necrosis of the alveolar margin, and mucous or cutaneous fistulæ, etc. These accidents sometimes assume the chronic form and sometimes are intermittent. Left to themselves, they may give rise to great mischief, such as deformities and cicatrices of the face, and a general condition that may even place the patient's life in danger. As the mortified summit of the root of the tooth cannot be otherwise got at, preliminary extraction is required in order to enable the diseased portion to be excised, the portion of the tooth which remains sound then being restored to its original place. Before restoring it the surgeon may, if necessary, resort to various procedures, such as washing out the purulent cavity or removal of sequestra, while as regards the tooth itself, he may excise portions of its crown, or perform plugging in the case of caries. In a good number of the cases treated, the periostitis of the summit was not accompanied by concomitant caries, but in others a co-existing caries was able to be stopped while the tooth was out of the mouth. The subsequent treatment consists in the application, when necessary, of gutta-percha supports, drainage, and the removal of any mortified portions of the alveoli, etc. In general the consequences of the operation are very simple. When consolidation has been effected a slight local reaction takes place, accompanied by few or no general phenomena. The fistulæ close, the discharge ceases, and complete consolidation takes place in from a week to a fortnight. The tooth recovers its vascular connections and its uses are re-established. When the attempt fails, the tooth is simply eliminated by suppuration in a few days.

M. David in his paper thus speaks of "grafting by restitution": "Re-im-

plantation combined with extraction is a procedure which enables us to subject the teeth to operations which would have been impracticable in the mouth. We have personally resorted to it—1. For the adjustment of certain anomalies of direction. 2. In the treatment of caries when the situation of this did not admit of our reaching the pulp in order to destroy it, and practise *in situ* a satisfactory stopping. 3. In the treatment of the form of alveolo-dental periostitis, in which this affection is limited to the summit of the root. It allows of our excising the affected parts just as is done on a diseased bone; and this excision is the only means of radically curing the neighbouring lesions which so often accompany this form of periostitis, as osteitis, necrosis, fistulæ, etc. If the tooth is carious it can also then be stopped. 4. It may also be resorted to in order to facilitate the execution of operation on another tooth or in another part of the mouth. The consolidation of the tooth replaced in its alveolus takes place, on the mean, from the tenth to the fourteenth day. It is more rapid (by the second or third day) when the roots are healthy. In cases of periostitis it is slower; and then, principally when there are osseous lesions in the vicinity, the existence and maintenance for some days of a well-established dental fistula is of first-rate importance. By this means the suppuration obtains free external issue, and does not disturb the organic phenomena which are in progress between the root of the tooth and the alveolus. To the discharge of the pus by the alveolus is due our single failure. The various lesions of the vicinity (fistulæ, etc.) in general are cured soon after consolidation takes place. The cure has remained durable in our earliest cases for more than two years.

"Thus methodized, this procedure seems to us to carry the curability of dental affections to its farthest limits. It has given us but one failure in twenty-two cases."—*Med. Times and Gazette*, Feb. 1, 1879.

Preliminary Tracheotomy in Excision of the Tongue.

At a recent meeting of the Clinical Society of London (*Lancet*, April 5, 1879), Mr. BARKER contributed a case of Excision of the Tongue, in which a preliminary tracheotomy had been performed. After giving a short history of the treatment of such cases by an immediate tracheotomy to avoid the risk of the passage of blood down the trachea, he alluded to two cases in which, to his own knowledge, this source of danger had proved fatal; but he added that in the case brought forward the tracheal wound had been purposely kept open in order to avoid, as far as possible, the risk of the inhalation of septic matters into the lung during the earlier part of the after-treatment. This was a real danger, for he had seen such operations followed by death, the result of septic pneumonia, or even gangrene of the lung. The patient was a man, aged 49, who was admitted into University College Hospital in April, 1877, suffering from an epithelioma of one side of the tongue, and some glandular enlargement below the jaw. Tracheotomy was performed with unusual ease, a small circle of the trachea excised, and Trendlenburg's tampon tube introduced and inflated. Considerable dyspnoea resulted at first, which, however, soon passed off. Syme's operation for the removal of the tongue was then performed, the jaw and lip divided in the middle line, and first one-half of the tongue cut through, and the vessels secured, and then the other. On the next day the tracheal tube was removed, the nostrils stopped with wool, a tube introduced into the mouth, and connected by an elastic pipe with a reservoir under the bed, whilst the mouth was otherwise closed by a pad. The patient was allowed to breathe through the tracheal wound. In five days the plugs were removed from the nostrils, and in a few days more the mouth was freed from the tube. The after history presented few

unusual features. There was on two occasions some oozing, requiring the application of perchloride of iron, and there was once a rise of temperature to 103° . This and probably the oozing depended on an alveolar abscess, which was relieved by the extraction of some loose teeth. The convalescence was rendered rather tedious by the exfoliation of two pieces of bone from the cut surfaces of the jaw, but the patient is alive and in fairly good health.

Mr. MARSH said the question was of great importance. Not long ago he had removed a portion of the tongue for epithelioma in a gentleman aged seventy-four. The operation was not difficult, but on the eleventh day he sank from septic pneumonia, probably set up as Mr. Barker had described. The usual practice at St. Bartholomew's Hospital was, after splitting the tongue in the median line, to remove each half by means of the whipcord *écraseur*, and not by the bistoury, as Mr. Barker had done. The division of the jaw complicated the operation; for it seldom united well, and in the majority of cases necrosis was common.

Mr. BRYANT did not see the necessity for the measures proposed by Mr. Barker. The risk from hemorrhage, when the *écraseur* was used, is very slight, and as to the inhalation of putrid air setting up pneumonia, although it doubtless could do this, yet it must be borne in mind that the subjects operated on were frequently advanced in life and enfeebled. Nor need the secretions become foul if detergents and salines be freely used. Was the tracheal wound large enough to admit all the air inspired? Tracheotomy wounds generally close with great rapidity. Where the whole tongue is involved then a preliminary tracheotomy and Trendlenburg's tampon would no doubt be very useful, and they were of great value in operations about the jaws. Syme's operation for excision of the tongue was rarely called for. Two-thirds of the organ can be removed without dividing the jaw.

Mr. BARKER, in reply, said he had fully demonstrated that the tracheal opening was large enough for the passage of all the inspired air. The wound was not a simple incision, but a circular opening had been made to admit of the passage of the tampon and tube. The rapidity with which pneumonia, going on to suppuration and gangrene, followed on some cases of this sort was strongly in favour of his view of septic influence. He mentioned two cases in which hemorrhage was fatal. Out of twenty cases, five had marked lung symptoms, four died with gangrene and abscess of the lung.

Treatment of Cystic Goitre.

In a clinical lecture delivered by M. GROSS, of Nancy, reported in the *Revue Médicale de l'Est* of November 15, he describes the treatment of cystic goitre, known as Michel's "mixed method," as extremely useful, and furnishes a case illustrating its advantages. Giving a rather extended review of the various modes hitherto proposed for removal of these growths, he points out their drawbacks, and the superiority of Michel's method over them. Briefly the latter consists in making a vertical incision in the skin over the most prominent cyst, and then dissecting carefully down through the various structures, until the wall of the cavity is reached. A very fine trocar is then pushed into the cavity with a canula, and through the latter the fluid is withdrawn. After this a plaque of *pâte de Canquoin*, about three centimetres broad, is applied to the surface of the cyst, the sides of the wound being protected by a circular piece of diachylon. This is left on a day or two until an eschar is formed, which soon after comes away, leaving a free opening through which the cyst can discharge, until it shrinks up, after suppurating for a time.

It is claimed for this method that it is less likely to give rise to dangerous

hemorrhage than several others, while, the caustic only being applied to the surface of the cyst, severe inflammation of the tissues around is avoided. Other cysts, if present, are similarly treated through the aperture in the first.—*London Med. Record*, March 15, 1879.

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*Intraparietal Hernia Complicated with Internal Strangulation; Taxis;
Kelotomy; Recovery.*

The case brought before us here (*L'Union Méd.*, No. 3, 1879) is one of some interest *à propos* of the line of action to be adopted where such complications arise.

The patient had had a hernia on the left side, about a finger-breadth above the internal inguinal ring, for about eight years. On January 11, 1878, he developed all the symptoms of strangulation of the hernia. On the 13th, the small tumour was reduced with ease under chloroform, and gurgled as it disappeared. Relief was experienced for some hours, but similar symptoms again developed themselves on the 14th. In the evening, kelotomy was performed, and a small sac found between the walls of the abdomen; no strangulation. The neck of this sac was then slit up, and the fingers "were introduced into a large cavity full of coils of congested intestine." On careful search with the finger far back in the pelvis, the opening of this was discovered, and divided with the greatest difficulty. We had before us here an intra-parietal (? inter) hernia, not strangulated, behind which there was a second intra-abdominal (? sub-peritoneal) sac of great size, and with a very narrow neck, the true cause of the strangulation.

So great was the difficulty of finding this inner constriction, and danger of dividing it, that the operator advocates in similar cases opening the abdomen by an incision, as in ovariectomy, in the middle line, instead of through the first sac, and thence looking for the constriction in the peritoneal lining of the abdomen. This has been done in an analogous case by M. Terrier (*Bull. de la Soc. de Chir.*, t. iv. p. 361, 1878), when no difficulty was experienced in finding or dividing the constriction. In the case before us the patient recovered.—*London Med. Record*, Feb. 15, 1879.

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Cystotomy for Cystitis.

At a late meeting of the Clinical Society of London (*Lancet*, April 5, 1879), Mr. TEEVAN read notes of a case of cystotomy, the patient (who was exhibited) being a wine-cooper, aged 43, who came under care in July, 1875, having a stone in the bladder two inches by one inch and three-quarters. The urine was a mass of muco-pus streaked with blood; no renal elements could be found. He suffered much pain, and could not work. Mr. Teevan determined to crush the stone because he had, by lithotrity, completely cured a similar case, where the stone was only a quarter of an inch smaller, and he wanted to find out the extreme limit to which the operation could be advantageously pushed. Accordingly, in twenty-six sittings of about one minute each, he completely removed all the stone. The patient was, however, not cured, but only relieved. The pain he suffered incapacitated him from work, and the urine contained much muco-pus. For many months various medicines and injections were tried without success. Under these circumstances he determined to perform cystotomy. The bladder was carefully examined by many surgeons, but not a particle of stone could be discovered. On Sept. 17th, 1876, Mr. Teevan opened the bladder by a median incision from the perineum, incising the neck vertically with a probe-pointed knife to the depth of about half an inch. The immediate effect of the operation was that the patient was relieved of his pain, and the urine began to

clear about ten days afterwards. Three weeks after the operation the patient was apparently cured of his cystitis. The wound, which had been kept well open, was then allowed to close, and three weeks later the patient was perfectly well and water-tight. He remained perfectly well, and had continued uninterruptedly at work ever since. Cystotomy was rarely performed in England, and was only mentioned in a few surgical works of modern date. In America, however, it had been established as a set operation since 1850, when Willard Parker, of New York, introduced it. The propositions he would lay down were—1. That cystotomy was indicated in those cases of obstinate cystitis which resisted ordinary treatment. 2. That renal disease was no bar to the operation. 3. That the general conditions of the patient rather than the results of an examination of the urine ought to determine whether, in a given case, an operation were justifiable or not.

Mr. HOWARD MARSH asked whether it would not have been better in this case to have cut in the first instance.

Mr. BRYANT agreed that cystotomy was an operation which should be more frequently performed for chronic irritation of the bladder which resists other treatment, and so often leads to fatal renal disease. In three out of six cases in which he had performed it there was great relief and recovery, but the rest died from prostatic and renal disease. He would then hesitate about performing cystotomy if the kidneys were diseased, for in such cases the slightest interference might be fatal. As an instance of this he mentioned the case of a man who, during treatment for a urinary fistula, had several rigors. Some time after he was seen by Mr. Bryant, who, aware of these rigors, did not think it wise to operate, but employed catheterism up to No. 10. The catheterism induced rigors, and the patient died from uræmia due to suppurative nephritis. Aston Key had first pointed out to Mr. Bryant the advantages of cystotomy for chronic bladder cases, and used to regret that he had never performed it.

Mr. HEATH asked whether Mr. Teevan divided the whole length of the prostate along the floor; for in that case (as pointed out by Mr. Teevan himself, as an objection to median lithotomy in children) the ejaculatory ducts would be severed? In older people the operation would be more difficult and risky, on account of the large size of the prostate. Was the hemorrhage free?

Mr. TEEVAN said it might have been better to have cut in the first instance, or rather to have followed up a single lithotripsy by an external urethrotomy. Even when renal disease was present, cystotomy was justifiable, because of the great relief to the local symptoms afforded by the operation, and the chance of recovery. He mentioned a case of cystitis after lithotripsy, which was allowed to go on for about two years, and was then relieved by cystotomy. A medio-lateral operation would, he thought, be preferable in old men, and the objection to median lithotomy in boys—namely, the risk of emasculating them—was of slight importance in the case of middle-aged adults.

Perforating Ulcer of the Foot.

At a late meeting of the Royal Medical and Chirurgical Society (*Lancet*, April 5, 1879) a paper by Messrs. SAVORY and BUTLIN on "Perforating Ulcer of the Foot," was read. After some introductory remarks, and the relation of five cases of perforating ulcer which have come under their notice, the authors describe the general characters of the disease, and discuss its pathology. From the symptoms which almost invariably accompany perforating ulcer, from their examination of the leg after removal in two cases, and from reports given in other papers, the authors believe that the disease is due to central or peripheral nerve-lesion,

especially affecting the sensory and trophic or vaso-motor nerves. Microscopic drawings of the condition of the nerves in two cases accompany the paper.

Mr. ERICHSEN said the affection was infrequent, and the point of greatest importance raised in the paper was the strong evidence adduced by the authors in favour of its being the result of nerve-lesion. Weir Mitchell had described certain neuroses of the foot and hand, especially of the foot, marked by areas of hyperæsthesia, œdema, coldness, and other signs of imperfect nutrition; such cases pointed in the same direction as these instances of perforating ulcer, affording evidence of the influence of the nervous system in producing localized disease of a limb.

Professor HUMPHRY remarked that in every instance a corn seems to be present at the seat of the ulcer, and the question arose how far the corn may have been the cause of the nerve-change. For in all these cases the disease was described in an advanced state, when the ulcer had formed leading down to bone, and with this was evidence of impaired nerve-supply; and the question arose whether in the earlier and simpler stage there was any affection of nerves present. Slighter cases of this kind were not frequently seen, and he thought one good effect of this paper would be to direct the attention of surgeons more forcibly to corns. A corn consists not simply of hypertrophy of the cuticle, but also of the papillary layer, and, as it advances, the greater growth of cuticle in its centre gradually leads to an invasion of the cutis and even of the deeper tissues by the cuticular products. Then sometimes inflammatory changes are set up beneath the skin, and may spread deeply into the foot, the pus burrowing into the sheaths of the tendons and through the joints. Might not the nerve-condition described in the paper be the effect of the prolonged irritation of a corn? The "perforating ulcer" affected places where corns were most frequent, the most incurable corns being those seated over the metatarso-phalangeal joints of the middle and great toes. Referring to a comparison drawn by the authors between the nerve-lesion in leprosy producing ulcerative changes and the nerve-lesion in "perforating ulcer," Professor Humphry pointed out that in the latter it seemed as if there was a combination of the characters of the two forms of leprosy—the tubercular and the anæsthetic. From this point of view, then, he would rather style the affection "corn-ulcer" than "perforating ulcer"—a term already applied to definite diseases of the palate, stomach, and intestines.

Dr. DUKA, from his experience of leprosy in the East, considered that the drawing showing one of these ulcers on the sole of the foot bore a striking resemblance to the changes met with in anæsthetic leprosy and sometimes in tubercular leprosy. He had seen in these diseases an ulcer appear on the sole of the foot, and penetrating to the bones.

Mr. EDMUND OWEN related two cases of perforating ulcer of the foot which had been under his care at St. Mary's Hospital. In one, that of a carpenter who had long been troubled with corns, the fourth toe had been amputated eight years ago; seven years subsequently the second toe had been removed, and six months since Mr. Owen had amputated each little toe, with part of the metatarsal bone, for the same affection. There was insensibility of the deep tissues of the feet, with marked impairment of the sensory nerves on the sole and dorsum. The toes were deformed, and the phalanges necrosed. In fact, the disease bore a remarkably strong resemblance to anæsthetic leprosy. He did not consider that the perforation was due to pus burrowing upwards for an outlet, for it would hardly penetrate plantar and dorsal fasciæ and interosseous spaces rather than the thickened epidermis. Moreover, in this case the dorsal end of the sinus did not pierce the integument. The other case was that of a professional pedestrian, whose sole was deeply ulcerated; the skin of the dorsum of the foot was anæsthetic and

mottled with white patches; the toes were also deformed as in leprosy. Nélaton's description gave an excellent account of the disease. English authors had hitherto written little concerning it.

Dr. THIN said these cases of perforating ulcer had nothing in common with leprosy, the pathology of which was distinctly a new cell-growth invading and destroying tissues.

Mr. MORRANT BAKER asked if there was any contraction of the extensor tendons. It was a common belief that such contraction favoured the development of such ulcers by throwing the weight of the body on to the ends of the metatarsal bone. Such contraction might itself be due to some nerve-affection. That the explanation of the production of the ulcers by nerve-lesion was the true one he had no doubt. A paraplegic patient came to him with an ulcer on the foot, for which amputation was necessary. There was no pressure on the foot, for his paralysis compelled him to walk with crutches. Some time after an ulcer of like character appeared on another toe.

Mr. GAY did not gather that a corn always preceded the formation of the ulcer. He mentioned a case illustrative of the inveteracy and incurability of these ulcers. A gouty subject of about fifty, after an injury, lost sensibility in the great toe, and after a time an ulcer formed on the ball of the toe. This would not heal, and, although Mr. Gay tried to cure it by transplantation of skin from the neighbourhood, still fresh ulceration appeared at the margins, and the patient's state remained as before.

Mr. GASKOIN could not accept Dr. Thin's assertion as final, for he believed there was affinity between this "perforating ulcer" and anæsthetic leprosy, and he thought some writers mentioned new cell-formations in the nerves in the former as in the latter affection.

Mr. BARWELL recalled a paper by Fischer, who in 1875 advocated the neuro-paralytic doctrine of the formation of these ulcers. He himself thought Professor Humphry's view could not be sustained, for corns were extremely common, and were usually seated not at the sole of the foot, but on the back of the little toe. At the same time a suppurating corn might lead to necrosis and considerable mischief in the foot.

Mr. SAVORY, in reply, said that appended to the paper was a full bibliography, where Fischer's work was alluded to, but the most original paper was one by Duplay and Morat. Facts would not support Professor Humphry's view, for all perforating ulcers do not begin in corns. There was one case in which the ulcer reappeared again and again after amputation, and usually evidence of nerve-lesion *preceded* the local affection. Again the change in the nerve was often more advanced in the upper than in the lower part. That the disease often commenced in the site of corns was undoubted, probably because these were parts much subjected to pressure, and their view was that, owing to mal-nutrition from the nerve-change, these parts suffered from such pressure. As to leprosy, he remarked that resemblance in certain features by no means established identity of disease. The fact of defective nutrition from nerve-change was of great importance as regards the results of operations, especially at the present time, when so much attention is being paid to the external condition of wounds to the disregard of the condition of the parts cut through.

Mr. BUTLIN said the point common to perforating ulcer and anæsthetic leprosy was the formation of an ulcer due to obvious changes in nerves. The paper by Fischer was based on the work of others, and contained no original observations.

Mr. SAVORY, in reply to Mr. Baker, added that in two of the cases there was some contraction of the extensor tendons, but he did not see how this could possibly have to do with the nerve-lesion.

On Osteomyelitis.

According to Dr. ROSENBACH of Gottingen (*Deutsche Zeitschrift für Chirurgie*, Band x, Heft 3-4), phlegmonous inflammation of the medulla of bone is not readily produced through the simple action of mechanical, physical, and chemical agents. This author, in experiments on animals, has frequently crushed and lacerated the medulla, has passed a seton through the tissue, applied active physical irritants, as, for instance, the actual cautery, and also chemical agents, as caustic alkalies and fuming nitric acid, without having ever succeeded in setting up phlegmon. On the other hand, the injection of a small quantity of septic pus or of some other putrid material will invariably set up, in bone marrow, a phlegmonous inflammation similar in course and character to the so-called spontaneous osteomyelitis. The results obtained from these experiments lead to the conclusion, previously derived by Professor Lucke from chemical observation, that the so-called osteomyelitis invariably results from infection. The infective material must be carried to the medulla by the blood, and the localization of the phlegmonous attack may depend on injury, chilling, or, in brief, on some local disturbance of the circulation. It is difficult, however, in every case to account for the localization.

The author suggests that osteomyelitis is a specific infective disease presenting certain definite characters. It is not communicable. The infective material, when present in the blood, is capable of setting up localized phlegmon of bone-marrow with or without the associated influence of some local circulatory disturbance, as traumatism or chilling. The general condition of the patient is not, as a rule, much disturbed by the direct action of this material. The grave general symptoms that are so often met with in cases of osteomyelitis are due to the direct passage into the vascular system of decomposed fatty material and products of inflammation.

The author relates that he has proved by experimentation on animals that a general infection may be established affecting very slightly the general system, but capable, in association with fracture of any long bone, of causing in the injured bone a localized inflammation similar in nature to osteomyelitis.—*London Med. Record*, Jan. 15, 1879.

On Arthritis Due to Lymphatic Propagation.

In a communication made to the *Académie de Médecine* (Oct. 16), M. VERNEUIL stated that he had met with five cases in which a secondary arthritis of the knee followed a lymphangitis of the lower extremity. The first of these was a man, 50 years of age, with a shattered constitution, who had an ulceration on his instep, and shortly a lymphangitis of the corresponding lower extremity, giving rise to numerous abscesses, equal to an olive in size. After some of these in the region of the knee had been opened, the joint became the seat of violent pain and inflammation, and presented all the signs of a purulent arthritis. In spite of every care the patient died some time after. The second patient was a young girl of 14, who received a contusion of the great toe; from this arose a lymphangitis and multiple abscesses in the leg. One of these, situated on the inner side of the knee, was opened; this was followed, in a few days, by a purulent arthritis, and neither drainage of the articulation, nor immobility of the limb, could prevent an unfortunate termination.

In the third observation, the man was cachectic, and 48 years old, with a wound on the dorsum of his foot about the size of a five-franc piece; this was followed by rigors, vomiting, fever, and a lymphangitis. The urine contained some albu-

men. By appropriate treatment the lymphangitis subsided and the albumen disappeared, but an abscess showed itself in the neighbourhood of the knee; this opened spontaneously, but a purulent arthritis was set up, from which the patient slowly succumbed. The fourth case was that of a man with lymphangitis and erysipelas, arising from a wound of the great toe, which opened into one of its articulations. The resulting inflammation extended as far as the top of the thigh, but as the swelling subsided an enormous hyarthrosis of the knee appeared. Emollients, tincture of iodine, and blisters partly dispersed this, but the patient, who was always weakly, had bed sores, and died from pneumonia. The last observation was upon a man aged 60, who was cachectic and had a collection of fluid in his knee-joint. An examination revealed an excoriation on the foot, a lymphangitis of the lower limb, and an adenitis of the groin; on the inner side of the knee there was also a collection of pus. The limb was kept immovable, and frictions employed. The abscess was finally laid open, the fluid absorbed, and the man recovered.

M. Verneuil remarks that the explanation of these phenomena is not easy; persons who are cachectic and with an external injury seem generally to be the victims. It is admitted that the lymphatics of the subcutaneous cellular tissue communicate with the synovial articulations opening into the bursæ, and permitting by extension the inflammatory propagation, which in these cases had been observed. At first, a communication is frequently established between the lymphatics and the periarticular serous membranes, then between these last and the articular ones. Early opening, with the modern antiseptic precautions, is recommended for these lymphatic abscesses, decided benefit having been found to result from so doing.—*London Med. Record*, Jan. 15, 1879.

On Periarthritis of the Knee.

M. FATOME (*Thèse de Paris*, 1878, No. 16, and *Bulletin Générale de Thérapeutique*) says that this disease may be divided into three classes, according to its progress. These are acute, subacute, and chronic periarthritis. In some cases the sheaths of the tendons and the bursæ are œdematous, while in other cases we find that these same organs are dry and thickened; a more or less rapid and abundant suppuration may also be present. The crackling which is peculiar to synovitis crepitans is heard either on the same level with the pes anserinus, or on the bursa patellæ, or lastly on the same level with the bursa on the upper part of the tibia. Purulent gatherings may often present the appearance of some affection within the articulations. A painful spot on the circumference of the articulation is often a symptom of suppuration of the ends of the joints. The moment that the accumulation of matter has been proved, it ought to be removed as quickly as possible. Sometimes the synovial membrane of the joint is also attacked, but this does not occur in the beginning of the disease; it generally remains healthy, thanks to the layer of fibrous tissue which forms between the inflamed place and the synovial membrane.—*London Med. Record*, February 15, 1879.

Spontaneous Fractures, considered especially from the point of view of Etiology, Prognosis, and Treatment.

PATEY (*Thèse de Paris*, 1878) divides the fractures into three classes, and each of them into two groups, viz.: 1. Spontaneous inflammatory fractures, acute and chronic. 2. Spontaneous fractures, caused by rarefaction of the bone, local and general. 3. Spontaneous fractures, caused by osteomalacia, simple and of nervous origin.

Class No. 1 comprises all spontaneous fractures caused by osteitis, osteomyelitis, or acute juxta-epiphysary osteitis. During this acute stage the inflammation acts upon the bones, producing the necrosis either of a diaphysis *in toto* or in separating the diaphysis from the epiphysis. By chronic inflammation the tissues in which a sequestrum is imbedded is much thinned, and the fracture is brought on by the inflammation becoming suddenly acute.

Fractures which occur in diathesia, scrofulous, tuberculous, and syphilitic inflammations are generally caused by the rarefaction of the bone, and seldom by necrosis. General affections, such as cancer, syphilis, scrofulosis, rachitic disposition, osteomalacia, and scurvy, tend to produce in the bone a local predisposition to fracture, which either concentrates itself on one special point or else is diffused over the whole skeleton.

A local predisposition is due to the presence of a cancerous tumour or to the existence of a specific osteitic process, such as scrofulosis, tuberculosis, or scurvy. The action of rachitis on the bone is a rarefaction of the diaphysis at the expense of the epiphysis. Osteomalacia spreads over the whole of the skeleton, decalcifying it. Alterations which are caused in the bones by nervous, central, or peripheric lesions, vary according to the nature of the affection.

Spontaneous fractures very seldom occur in cases of paralytic lesions of the nervous centres, whether they are located in the brain or the cord. The only exception to this rule are fractures which happen in the nervous osteomalacia of maniacs. As far as spinal lesions are concerned, irritating ones are the only class which are capable of producing such an alteration in the bones as to cause a fracture. This is especially seen in locomotor ataxy, where quick consolidation and exuberant growth of osseous matter are very remarkable. The author quotes one case of spontaneous fracture which occurred in the course of variola, and was without doubt caused by the zymotic germs of the disease. So far as the prognosis is concerned, two points have to be especially kept in view, viz., the probability of consolidation of the fracture and the origin of the latter. With the exception of cancerous fractures consolidation may occur in almost every case. The treatment depends on the etiology and the condition of the fracture.—*London Med. Record*, March 15, 1879.

Practice of Nerve Stretching.

Dr. E. MASING, of St. Petersburg, reports in the *St. Petersburger Medicinische Wochenschrift*, No. 34, 1878, two cases treated by exposure and stretching of nerve trunks.

The subject of the first case was a male, aged 37, who had for eight years suffered much from neuralgic pains in the lower limbs. The attacks commenced near the antero-superior spine of the left ilium shortly after the man had been exposed during one night to cold and wet. In spite of frequent and varied treatment, the pains gradually increased in intensity and extent, and finally radiated along both extremities. Between five and six years after the commencement of this affection, the muscles moving the right foot became paralyzed, and soon afterwards those of the left foot. During the last year there had been slowly developing anæsthesia along the posterior surfaces of both lower limbs. The patient, when first seen by Dr. Masing, was mentally depressed, pale, and emaciated. He was easy only when sitting with the lower limbs up to the hips enwrapped in woollen material. Intense pain was caused by any movement, by exposure of the lower limbs to cold air, and by the recumbent posture. The pain commenced near the left ilium and from thence extended to the lower limbs. No objective morbid sign could be made out at the starting-point of the pain; there was no subcutaneous infiltration or peritoneal thickening. The pulse was normal.

The lower limbs were wasted and the feet and limbs cool. There was almost total anæsthesia of the skin over the ischiatic region, along the posterior surface of each thigh, and over the whole of each leg and foot except in the portions along the inner surface supplied by the long saphenous nerve. All the muscles of both legs and feet were paralyzed, those of the thighs, supplied by the anterior causal and obturator nerves, were not thus affected. There was occasionally involuntary discharge of stools, and micturition was much impaired.

On September 15th, the patient having been placed under the influence of chloroform, a vertical incision 10 centimetres in length was made from the fold of the buttock downwards along the posterior surface of the left thigh. The sciatic nerve, which appeared to be quite healthy, having been exposed and isolated was then forcibly extended. At the same sitting a similar operation was performed on the right side. The proceedings occupied about twenty minutes, and were carried out under antiseptic conditions. For some hours after the operation the patient suffered most severely from radiating pains in the region of the left hip. On the following morning he was easy and could lie down without trouble. On the fourth day he suffered much from pains over nearly the whole body, and especially in those parts of the legs and feet which before the operation had been anæsthetic. On the fifth and sixth days there was but little pain. On the seventh day he suffered much from burning sensations along the course of the left long saphenous nerve. On November 3d there was marked improvement, the pains radiating from the left iliac region had been much relieved and the man was now able to move the muscles of the legs and feet. The main trouble at this time was severe burning pain in the left anterior crural nerve and along the left saphenous nerve as far as the knee. On November 8th the left anterior crural nerve was exposed and stretched. The operation was soon followed by much improvement in the general condition of the patient. On April 7th of the present year the man was in good health, able to walk well, and quite free from pain and from anæsthesia.

The subject of the second case was a boy, aged 12 years, whose left foot had been injured through a fall. The injury had resulted primarily in swelling of the extremity with much tenderness, and subsequently in persistent spasm of the muscles of the left leg. When the patient was first seen by Dr. Masing, the left foot presented a condition of extreme equino-varus, all the toes being bent at right angles to the dorsum. The muscles of the left leg were in a tetanic condition. Active movements at the joints of the distorted foot were completely abolished, and attempts at passive motion were attended with much pain. There was hyperæsthesia of the skin of the foot and leg, and also very marked tenderness over the trunk of the sciatic nerve in the thigh, and along the three great branches of this nerve in the leg. Locomotion was prevented through pain. During sleep the foot became lax and as mobile as the opposite extremity. The contraction and distortion recurred at the moment the lad was aroused. Dr. Masing diagnosed the case as one of neuritis of the sciatic nerve, commencing as a result of the injury to the foot in the perineal and two tibial nerves and invading gradually the main trunk. The healthy condition of the ham-string muscles indicated that but part of the sciatic nerve was affected, and the unilateral extent of the morbid condition, the preservation of the normal innervation of the bladder, and of all portions of the body supplied by the lumbar plexus, led to the conclusion that the spinal cord and its membranes remained in a healthy state. On January 16th, after other plans of treatment had been tried without any success, the left sciatic nerve was exposed and stretched. This operation was followed on the next day by contractions over the whole of the left lower limb, and by forcible flexion at the knee. The hyperæsthesia of the leg still persisted. On

the third day the patient suffered much from chronic spasm of the muscles of the left leg. During the first week in February, no improvement having taken place previously in the condition of the limb, there were frequent paroxysms of violent clonic spasm, the leg becoming very much flexed. At this time the hyperæsthesia had extended beyond the region of the leg and passed to the left thigh, and to the left sides of the pelvis, abdomen and thorax. From February 6th, when the patient was first treated by frequently repeated subcutaneous injection of morphia, there was a temporary improvement, and in the course of one week all the more severe symptoms had disappeared. At the end of a fortnight, however, after the cessation of this treatment in consequence of dyspepsia, loss of appetite, and headache, all the patient's troubles returned. Towards the end of May some improvement was noted after continuous blistering of the spine in the lumbar and sacral regions. The pain was then much relieved, and the patient was able to go about on crutches. The paroxysms of clonic spasm were much less frequent and less severe, but distortion of the foot and friable flexion at the knee still persisted.

The patient was again seen after an interval of three months, on August 16th, and his condition had then much improved. He was able to extend the left leg so as to touch the ground with the toes, and could walk without crutches. There was still much hyperæsthesia. The lad's general condition was very satisfactory.

Dr. Masing, in some remarks on this case, states that there was much obscurity as to its precise nature. The symptoms, he holds, contraindicated any central lesion and pointed rather to a reflex neurosis. The nerves about the left ankle had probably been torn and contused in the injury to this joint, and a centripetally spreading neurosis had resulted. The disturbances set up after the operation in the regions supplied by the anterior crural, lumbar, and intercostal nerves were, it is supposed, purely reflex, since neither atrophy nor paralysis could be observed in the affected parts.—*London Med. Record*, Jan. 15, 1879.

Midwifery and Gynæcology.

Case of Gestation Prolonged to Fifteen Months.

Dr. HENDERSON reported (*Am. Journal of Obstetrics*, April, 1879) the following case in which the duration of pregnancy is said to have been prolonged to fifteen months:—

He was called in the latter part of January, 1860, to see a lady about 35 years of age, who was the mother of several children, and quite healthy. Her previous confinements were in no particular remarkable. She had menstruated regularly until the previous December, which period she missed, making the flow in the early part of November the last previous to the time he was called. She had a slight hemorrhage from the uterus, associated with more or less pain in the back and lower part of the abdomen. The womb upon examination was found enlarged to about the size that we would expect to find it at the period of two or two and a half months' gestation. The patient expressed herself well satisfied that she was pregnant, and feared very much that she would have an abortion. He prescribed sulph. morphia and enjoined rest, which soon relieved her.

She continued to develop until about the proper time, when she quickened, which led her to suppose that she would be delivered about the middle of August following. He said that he saw the patient frequently from the time he had been

called, and believed from her appearance that she would be confined at about the anticipated time. She, however, continued for a month or more over the expected period, and becoming uneasy again, sent for him. He made an examination and found the uterus to all appearance at the full period of gestation, but the os was not in the least dilated.

The patient said to him that she had felt the movement of the child from the period of quickening up to that time, and that the motion, so far as she could remember, was just the same as in her former pregnancies. She continued in this condition until about the first of November, at which time he made another examination, and found the uterus apparently larger, but in every other respect about the same as it was at the last examination.

He now left the patient in the care of another physician, as he expected to be absent for a few months. About the middle of February, 1861, he was sent for again, as both patient and physician were becoming quite uneasy. Before leaving the city, he consulted Prof. M. B. Wright concerning the case, who expressed himself quite hopefully as to the final result, saying that he had seen cases of prolonged gestation, but that they had all terminated favourably, although he admitted that he had never seen one quite so prolonged as this one seemed to be.

Dr. H. again visited his patient in consultation with the physician with whom he had left the case. Found the patient apparently in good health, but with the abdomen enormously distended. She had not had labour pains up to this time, which was the 15th of February, 1861, making in all fifteen months since she supposed herself to be pregnant. The os was considerably dilated and dilatable. A suspensory bandage was improvised and the weight of the abdomen suspended from her shoulders.

In a day or two labour came on, and after a tedious and painful labour, they were compelled to deliver her with the forceps.

The child, weighing *sixteen pounds and a half*, was stillborn, having evidently died during the labour, as was clearly proven from the fact that the movements of the child were distinctly felt up to within three hours of its delivery.

Dr. H. then said that, although he had given a faithful history of the case, yet he could not help feeling that there would be in the minds of many, if not all, who heard his remarks, serious apprehensions after all that there must have been some mistake about the case. He, however, felt it to be his duty to narrate the circumstances, notwithstanding the serious doubts to which it might give rise.

Eruptions Connected with Menstruation.

Dr. SCHRAMM has published in No. 42 of the *Berliner Klinische Wochenschrift* for 1878, the following observations: An unmarried lady, aged 36, of anæmic appearance, had suffered for seven years from dysmenorrhœa, which she had contracted from a severe chill. Simultaneously, the dorsal surfaces of both hands were covered with disseminated brownish nodules, of the size of a lentil, which disappeared in the course of a week, but reappeared at the next menstruation on other places of the dorsal surface. Later on, similar nodules developed on the neck and the labia, accompanied by slight itching; sometimes a few pinkish irregular infiltrations would break out behind the ears; a few little spots, which soon developed into blisters, were disseminated on the tongue. These eruptions were complicated with a circumscribed painful swelling of the orifice of the urethra, which greatly impeded micturition. The eruptions and papules on the neck and labia always lasted for a few months, while the other nodules generally disappeared within a week. On vaginal examination, it was found that the patient suffered from anteflexion of the uterus, complicated with catarrh of the uterus and the vagina. These affections were treated methodically, and the patient

ceased to suffer from dysmenorrhœa and from the eruption. After her recovery, and after exposure to much fatigue, she had the menstrual pain, and the eruption reappeared, but only once. Another patient, who was consumptive and suffered from retroflexion, had her back and shoulders at the time of the catamenial flow covered with a peculiar eruption in the shape of small red nodules, which formed long lines, and gave to the skin the appearance of being of an uniform red colour. They were accompanied by a sensation of some tingling and itching, and disappeared after three days. Dr. W. Wagner has also published some cases of "catamenial erysipelas" in the *Allgemeine Medicin. Central-Zeitung*, No. 94, 1878. The first case was that of a girl, aged sixteen, who had menstruated regularly since the age of fourteen, but had, since the date of the first flow, suffered from erysipelas of the face, which began four or five days before the menses, and lasted about eight days. It spread over the head, thereby causing the hair to fall off. Her head had grown almost bald, so that she always had to wear a handkerchief over it. Her health was good, and nothing abnormal could be detected in any internal organ. She was treated with Fowler's solution and iodide of potassium, but without any result. The second case was that of a country-girl, aged seventeen, who menstruated for the first time six months ago, and had had erysipelas of the face shortly before this. The inflammation increased during five days, but vanished speedily with the appearing of the flow. In this case, however, the erysipelas was not repeated with the same regularity as in the first case; it was only observed whenever the menses were irregular. The patient was very anæmic, and was accordingly treated with dialysed iron. The third patient was a woman, who had reached the time of the menopause. She had always been strong and healthy, and had never had the least trouble during the time of the catamenial flow. The menses disappeared for the first time at the age of forty-seven, for about eight weeks, when they reappeared; they were accompanied by a very slight erysipelas of the face. The same phenomenon was repeatedly observed during the next eighteen months, when the periods disappeared altogether. In the next year, a very slight erysipelas was observed three or four times, which, however, did not spread any further than the nose. The first case, undeniably, is the most peculiar one, as it could not be traced to any pathological affection of the genital organs, and the flow itself never had any influence on the duration of the erysipelas. The two other cases were evidently in some way influenced by the period, as they were only observed at the time of its cessation, or when it was irregular.—*British Med. Journal*, March 8, 1879.

Death following Vaginal Injection of Acetate of Lead.

The following case, published by Dr. SPÄTH in the *Centralblatt für Gynäkologie* (No. 25), tends to prove that, in making injections into the vagina, the fluid may pass through the Fallopian tubes into the abdominal cavity. The patient, a healthy woman, aged twenty-two, married, and who had been confined ten weeks previously, had been ordered by the author to daily inject into the vagina a weak solution of acetate of lead, in order to cure her of leucorrhœa. On the eleventh day, the patient, being in a hurry, probably used too much force in injecting. She suddenly felt a violent pain in the lower part of the abdomen, and fainted. When Dr. Späth was summoned, he found the woman very much changed. Her face was livid, and wore an anxious expression; her pulse small and frequent. The abdomen was very tender on pressure, although not inflated. A violent attack of peritonitis followed, and the patient died at the end of seventy-four hours. No injury to the uterus or vagina had been detected by the author at his first visit. The *post-mortem* examination gave the following results: The intestines were very much distended. The mucous membrane of the small

intestine was red, especially in the portions situated in the vicinity of the uterus and the broad ligaments. On the surface of the mucous coat of the small intestine, up to a level with the navel, and through the whole of the hypogastrium, were disseminated irregular round flat patches of a grayish colour, which could easily be removed, and beneath which the membrane was entirely normal. Similar patches were also found on the interior of the uterus, which did not present any alterations; neither did the vagina nor the rectum. The Fallopian tubes were very narrow, and did not present any sediment; while the broad ligaments in the neighbourhood of the fimbria, and the peritoneal surface of both ovaries, were covered with numerous black flakes of various sizes. This sediment, on being chemically examined, was found to consist of sulphide of lead. The author tries to explain this fatal accident through the tube of the injecting apparatus having, by some accident, entered the os uteri, so that the fluid was thrown into the uterine cavity; thence through the Fallopian tubes into the abdominal cavity, thereby producing the inflammation.—*British Med. Journal*, March 1, 1878.

Hernia of the Ovaries.

In an article on hernia of the ovaries Dr. ALBERT PUECH collects (*Annales de Gynécologie*, November, 1878) a large number of recorded cases and estimates the relative frequency of the several varieties. Far the most frequent form he finds to be the inguinal variety, of which he finds eighty-six observations. It is five times as common as the crural form, and at least four times as common as all other varieties put together. In new-born children it is the only kind of ovarian hernia met with. This relative frequency, so different from the case of intestinal hernia, is to be connected with the fact that the condition of ovarian hernia is in the majority of cases not an accident or malady, but a fault of development, according to which the ovaries tend to follow the course taken by the testicle in the other sex. Thus of the eighty-six cases only sixteen appeared to have been truly accidental, a similar number might be set down as doubtful, and in fifty-four there appeared to be no doubt that the hernia was congenital. The author considers that the ovary in these cases has been drawn down by the fibres of the round ligament, as the testicle is by the gubernaculum testis, but he thinks the process is not so much a true muscular contraction as a shortening of the fibres, analogous to the contraction of newly formed cellular tissue. In no less than thirty-three of the eighty-six cases the anomaly was associated with some other malformation of the genital organs. Four times there was a uterus unicornis or bicornis, sixteen times absence or rudimentary development of the uterus, and thirteen times feminine hermaphroditism. There were twenty-eight examples of double inguinal hernia, in eight only of which the genital organs were in other respects normally formed. In congenital hernia the ovary is found to be invariably accompanied by the Fallopian tube, while in accidental hernia it is more frequently isolated. In six cases the hernial sac was found to contain also the uterus or one of its horns, in three intestine, and in two omentum.

A typical example of the condition of double inguinal hernia of the ovaries associated with rudimentary development of the ducts of Müller is found in a case recently recorded by Werth (*Arch. f. Gyn.* xii. p. 132). The patient, twenty-two years old, was admitted into the hospital at Kiel in October, 1876. She had an angular curvature of the cerebral vertebrae resulting from a blow received at the age of twelve. At the age of fourteen she was affected by pains in the legs, which led to a weakness and diminution of sensibility in the right leg. The menses had never appeared, but every four weeks she had pains in the abdomen accompanied by exacerbations of the pains in the leg. An atresia of the

vagina had been discovered about nine months before. The osseous system was found to be fully developed, the voice feminine, but somewhat harsh, the breasts small and flat; the pelvis had preserved its infantile character. The external genital organs were normally formed, but the vagina was only represented by a depression five mm. in depth. No trace of vagina could be discovered between sound in bladder and finger in rectum. On conjoint examination under chloroform with the finger in the rectum a body could be reached on each side which was recognized as the kidney, but no trace of uterus or its annexes could be discovered, except two small bodies at each side of the pelvis, whose nature could not be precisely determined. At the time of the onset of periodical pains, referable to menstrual molimen, attention was attracted to a body as large as a pigeon's egg in the situation of the inguinal canal at each side. These bodies resemble testicles in consistence and in sensibility, and pressure upon them produced pain radiating to the kidneys and epigastrium. After the cessation of the periodical pains, the tumours appeared to be smaller, and their surface smoother. They had been first noticed by the patient at the age of fourteen, the period when pains in this région had first appeared.

The tumours were successfully removed under carbolic spray by Esmarch, on Feb. 2, 1877, and proved, as was expected, to be the ovaries. The hernial sacs contained also the pavilions of the Fallopian tube, and a pedicle, which appeared to be the extremity of the horn of a rudimentary uterus bicornis. These pedicles were tied with carbolized gut. The ovaries had an irregular surface covered with scars; they contained many Graafian follicles, but less than are usual at such an age. The left ovary contained a recent corpus luteum, six mm. in diameter; the largest follicle was eleven mm. in diameter, and contained an ovum. For a few days after the operation the patient had violent pains resembling those previously felt, but there was no febrile disturbance, and the leg had become stronger when she left the hospital, seven weeks after the operation.

Accidental or acquired hernia of the ovary is always unilateral; and more frequent on the right than left side. It is invariably due to the muscular strain, and it most readily arises after delivery, when an intestinal or omental hernia has existed previously. Crural hernia of the ovary the author finds recorded fourteen times, and it was acquired in all of these instances, except one case of a new-born child, recorded by Cloquet, in which a hernial sac, on the right side, contained the uterus, with the ovaries and the Fallopian tubes. The ovary in its abnormal situation is exposed to frequent lesions. Inflammation was noted in twenty-eight instances, cystic degeneration in seven, cancer in two, and tubercle in one. In one instance a cystic tumour of the displaced ovary, of eighteenth months' growth, was successfully removed by Lücke.

Dr. Puch relates at length a singular case which he interprets as gestation, in the sac of an ovarian hernia. It occurred in 1706, and was recorded in 1716 by M. Gouey, of Rouen, who supposed that a fecundated ovum had lodged in a pouch at the insertion of the round ligament, and during its growth passed down in the direction of the inguinal canal. A young lady of good position, aged 20, was brought to M. Gouey, in August, 1706, by her lover, on account of a tumour in her right groin, as large as a hen's egg, which had appeared about a month. M. Gouey, who had previously treated the lover for a venereal affection, at first considered the swelling to be a bubo. It continued, however, to grow for two and a half months, became unequal in outline, and strong arterial pulsations were felt in it. The patient being extremely anxious for a cure, the tumour was incised, and found to contain a fœtus, situated with its membranes within a sac of peritoneum. The fœtus, a living male, was of about three months' development, which corresponded with the period of cessation of menses. The placenta was

attached to the ring of the external, oblique muscle and to neighbouring parts. It was separated without difficulty by gentle traction upon the funis. Dr. Puech contends that for gestation to occur outside the abdominal cavity, as in this case, both ovary and Fallopian tube must have been in a hernial sac, the first to provide the ovum, the second to conduct the spermatozoa.—*Obstet. Journ. of Great Britain*, February, 1879.

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Total Extirpation by Abdominal Section of the Cancerous Uterus.

The operation for extirpation of the cancerous uterus by the method of FREUND has now been performed in a considerable number of cases. The mode of procedure was first described by Freund in the *Sammlung Klinisches Vorträge*. No. 133, for April, 1878, and some improvement in its details are mentioned in the *Centralblatt für Gynäkologie*, June, 1878; and in a communication made by him at the meeting of the German Gynæcological Society at Cassel, in September, 1878. Operations are also described by Dr. Fränkel, assistant to Dr. Freund (*Berliner Klin. Wochenschrift*, 1878, No. 31), and by Dr. Crédé (*Centralblatt für Chirurgie*, No. 32).

The method of operation, according to the latest improvements, is as follows:—

The patient is placed with the pelvis higher than the shoulders; the carbolic spray is used, but it is not allowed to enter the abdominal cavity. The vagina and cavity of the uterus are previously disinfected by a ten per cent. solution of carbolic acid, and an incision is made in the linea alba, as for ovariectomy. Dr. Freund now extends the cutaneous incision down into the mons veneris, and if the recti muscles are tense, divides partially or completely the tendons of these muscles, in order to obtain more space, but the peritoneum is not divided down to the symphysis. The intestines are drawn up out of the pelvis, and held wrapped in a soft linen cloth soaked in a warm solution of carbolic acid (two per cent.), until the operation is completed. If the body of the uterus is healthy, a strong ligature is passed through it, whereby to draw it upwards; but if diseased, it is seized by fenestrated forceps, the blades of which hold it firmly without lacerating it. The broad ligament on each side is then secured by ligatures in three loops. In order to avoid transfixing those portions of the broad ligament where large veins exist, the upper loop is passed through the substance of the Fallopian tube above, and through that of the ovarian ligament below. The middle loop transfixes the ovarian ligament above and the round ligament below. The passing of the lowermost loop is the most difficult part of the operation. An empty needle, immovably mounted on a handle, is first passed from the vagina into the peritoneal cavity in front of the broad ligament, and anterior to the uterine artery, the exact position of which is made out by bimanual examination. The needle is then threaded, withdrawn into the vagina, and again passed into the pouch of Douglas behind the broad ligament, and the thread so drawn upward into the abdomen. Finally, the loop is completed by transfixing the broad ligament, the ligature being passed through the substance of the round ligament. In his earlier operations, Freund found a difficulty in properly constricting the tissues by the lowest loop in consequence of their elasticity, and the result was apt to be a persistence of hemorrhage from the uterine artery after excision of the uterus, in spite of the lowest ligature. To avoid this, he now endeavors to include as little vaginal tissue as possible in the loop. The two punctures in each lateral vaginal *cul-de-sac* are made as close together as possible, and the needles are introduced in a strongly divergent direction.

After the ligatures are placed, the upper and posterior limits of the bladder having been defined by the catheter, the peritoneum between the two is divided by the knife. The anterior surface of the uterus is then separated from the blad-

der by the fingers or handle of the knife, the fundus uteri being meanwhile drawn by an assistant upwards or backwards as required, by means of the transfixing ligature or forceps. As soon as the anterior vaginal *cul-de-sac* appears as a reddish fold at the bottom of the wound between uterus and bladder, it is perforated from the vagina by a guarded knife, and the opening enlarged to both sides. One or two fingers are then passed from above through the wound into the os uteri, and the cervix is gradually drawn upwards through the wound into the posterior vaginal *cul-de-sac*, is fully exposed, and the position of the ligatures seen. The incision can then be carried round the cervix, so as to sever the uterus completely without risk of dividing the lowest loop of ligature, or injuring the ureters.

The uterus is thus removed through the abdominal wound. If, however, there is any open cancerous surface on the cervix likely to contaminate the peritoneum, either the cervix should be amputated previously, or all ragged tissue scraped away, and the wound touched with the cautery or strong carbolio acid. The pelvis is afterwards washed out with carbolio acid.

After the uterus is detached, all the ligatures, which are left long, are carried down through the aperture into the vagina, and strong traction is made upon the uppermost ligature, to which small rods have previously been attached to distinguish them.

In this way an inversion of the borders of the wound is produced, so that the ligatured stump of the broad ligament on each side presents in the vagina, and the uninjured portions of the anterior and posterior layers of pelvic peritoneum fall together in a transverse fold. The two layers are then united at this level by sutures, so as to shut off completely the peritoneal cavity. In his later operations, Freund has inserted into the peritoneum some of the loops destined to form this suture before excising the uterus. A plug soaked in carbolized oil (ten per cent.) is then placed in the vagina, by which canal the ligatures also are brought out, and are generally detached by about the fourteenth day. Besides closing the peritoneal cavity, the inversion into the aperture of the broad ligament has the advantage of supplying, to some extent, the loss of intervening tissue between bladder and rectum.

In estimating the results of the operation so far, it is of interest to recall the three operations published in 1828, and performed by Dr. Blundell, who extirpated the whole uterus through the vagina. Though in all three cases the disease had extended to the vaginal vault, so that they would hardly now be considered suitable for the operation, although he had the disadvantage of operating without anæsthetics, and although one patient died almost immediately from hemorrhage and shock, yet one of the three survived the operation, and was in good health five months later. Freund now reports five deaths in ten operations, one from peritonitis due to perforation of the sigmoid flexure affected by the malignant disease; one from supposed intussusception on the twelfth day in a case in which no autopsy could be procured, one from collapse in a patient who had granular kidney and fatty heart, two from septic peritonitis. None of the cases which survived had yet shown any sign of recurrence of the disease except one, in which there was a small and suspicious-looking hard spot in the right vaginal *cul-de-sac*.

Schroeder had operated nearly according to Freund's method in three cases, one of which recovered without a symptom; Martin in three cases, all of which proved fatal, one from septicæmia, the second from collapse; in the third infiltrated retro-peritoneal glands were found. Olshausen has operated twice. The first proved successful, although the bladder or the ureter was injured, and urine oozed from the vagina until six days after the operation, after which it ceased entirely. The disease, however, recurred in five months. The second case died

from secondary hemorrhage, and at the autopsy a cancerous kidney was found. Baumgaertner has operated once, but in a case unsuitable for the operation, as funnel-shaped excision of the cervix had been performed, and the disease had soon returned. At the operation the right broad ligament was found so much infiltrated with cancer that it proved impossible to avert the bleeding by means of ligatures applied after Freund's method. Several artery forceps were left attached, but in spite of drainage and irrigation with salicylic solution, the patient died on the fourth day, probably from septicæmia. Fränkel reports one case (*Berliner Klin. Wochenschrift*, 1878, No. 31) which proved successful, although the carcinoma had already extended to the upper part of the vagina, and the parametrium and the retractor uteri on the right side were infiltrated with carcinomatous nodules. The inguinal glands were swollen, but were not regarded as carcinomatous. Some of the carcinomatous portions of the vagina could not be entirely extirpated during the operation. They were tied, and removed on the thirty-seventh day by cauterization. Dr. Crédé reports a fatal case (*Centralblatt für Chirurgie*, No. 32). The carcinoma had spread over the whole vagina. Both ovaries also proved to be diseased, and were therefore removed. The peritoneum was not stitched together, but the edges of the vaginal wound were united by small forceps, which remained in the vagina. The patient seemed to be doing well at first, but suddenly collapsed, and died on the second day. At the autopsy, several of the glands in the pelvis were found to be diseased. Mr. Alexander, of Liverpool, also reports a fatal case. The patient was thirty-eight years old, showed no cachexia, and the symptoms dated about five months. The uterus was movable, and the disease was believed to be confined to it. The right Fallopian tube, however, was found to be affected by the disease of the ovary. The upper loop of ligature on the right side was, therefore, placed outside the ovary. After removal of the uterus severe symptoms of collapse appeared, although only about four ounces of blood were lost. The ligatures were, therefore, drawn into the vagina, and the abdominal walls brought together as rapidly as possible. The patient revived for a time, but died about an hour and a half after the operation, as the author believes, from shock, no further hemorrhage having taken place.

Thus, out of twenty-two cases here mentioned, there were eight recoveries, while several of the fatal cases were obviously unfavourable from the first, the disease having manifestly extended beyond the uterus. Not all of the twenty-two cases, however, were carried out strictly according to Freund's method, and in that author's own hands the mortality so far is fifty per cent. only, a result which fully justifies further trial of the operation in such a disease as cancer of the uterus. It is the practice of Freund to remove the ovaries as well as the uterus, if the menopause has not been reached. He recommends that the steps of the operation should be previously practised upon the dead subject. The method of operating is still more suitable for carcinoma or sarcoma of the body of the uterus than for that of the cervix. It may also obviously be extended to the case of fibroid tumours, which it has hitherto been generally considered possible to extirpate only when a sufficient length of cervix is left free from the growth to serve as a pedicle.—*Obstetrical Journal of Great Britain*, March, 1879.

New Clamp Suture.

At a late meeting of the Obstetrical Society of Philadelphia (*Am. Journal of Obstetrics*, April, 1879) Dr. ALBERT H. SMITH described a suture which he had employed successfully in closing lacerations of the perineum, and which is a modification of one proposed by H. L. Thomas, M.D., of Richmond, Va., in the *American Journal of the Medical Sciences* for October, 1877. A needle, armed

with a soft wire, is passed through the tissues in a straight line, and without emerging is carried around to the point of exit on the opposite side of the wound. A straight steel canula of proper length is now slipped down along each end of the wire, until the inner ends approximate. The ends of the wire are now drawn together and twisted, and the entire surface is held in close apposition.

Medical Jurisprudence and Toxicology.

On Poisoning by Cantharides used as an Erotic.

This case is reported by M. ROSOLINO BRAGA from the *Revista Medica de Rio de Janeiro*. The patient suffered from nephro-cystitis with albuminuria and hæmaturia, as a result of taking cantharides. Fortunately, he recovered from the more serious effects in a few days. M. C—, a Portuguese, aged 23, of general good health, was admitted into the hospital on the 17th January, 1877. The account he gave was that on the previous night, which he had passed with a public prostitute, he had drunk a glass of wine, presented to him by the girl as a glass of white port. He observed that it was thick and turbid, but he, nevertheless, drank it. In the course of the night he had intercourse with the girl, and with unusual ardour, which surprised him. Having expressed his astonishment to his companion, she candidly informed him that, in order to excite his amorous propensities, she had put cantharides into the glass of wine which he had swallowed.

In returning home about midnight, he was seized with a strong desire to urinate. In spite of all his efforts he could pass only a few drops of scalding urine, attended with severe pain throughout the length of the urethra, especially at the meatus, where he had the sensation like that of the pricking of pins. These symptoms became worse, and they were attended with priapism and severe pain in the genito-urinary organs as well as in the lumbar region, and with intense thirst. Under these circumstances, he came to the hospital for relief.

He was seen at 9 A. M. by Dr. Brandão. He was then much agitated, crying out and very restless. The eyes were injected and lustrous, the pupils were dilated, and the countenance animated. The pulse was small and frequent. There was nausea with intense thirst. There was the most acute pain in the urethra, rendered much worse when with great difficulty some drops of urine were expelled. The desire to micturate was incessant, and an acute state of nervous erethism was then produced. Only a very small quantity of urine could be discharged; and this was thick and bloody. The abdomen was retracted and sensitive to pressure, especially in the hypogastric region, where the slightest touch produced acute pain. Pain also was felt in the lumbar region, owing to the kidneys being affected, and this pain extended downwards to the perineum. The catheter brought away a small quantity of thick bloody urine containing albumen in marked proportion.

In the treatment, hypodermic injections, mild enemata, leeches, and poultices, were employed, with bromide of potassium internally. These remedies produced a rapid amendment in the symptoms. On the third day urine was passed naturally, and it contained no albumen. The patient left the hospital cured.

It was not possible to discover what preparation of cantharides had been taken by this man, nor the quantity in which it had been administered to him. Dr. Braga thought that the powder had been used in rather large proportion; this is

extremely probable, from the description given by the patient of the appearance of the wine.—*London Medical Record*, Feb. 15, 1879.

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Chronic Poisoning with Arsenic in Medicinal Doses.

The following case is reported by MACIEL in the *Revista Medica de Rio de Janeiro*. Dr. B—, of the Province of St. Paul, in Brazil, aged about 50, of a weak constitution, and subject to dyspepsia, had suffered for a long time from attacks of intermittent fever. He had taken large doses of the sulphate of quinine, but without much benefit, and he resolved to try the effects of Fowler's mineral solution, not only for the ague but for a skin disease with which he was affected. He persisted in this treatment for *three months*, and apparently with good effects. The quantity of the medicine taken by him latterly, *i. e.*, about the 16th January, 1876, was twelve drops twice daily. On the 17th January, while travelling by rail, the doctor suddenly fainted. From this he gradually recovered, and on arriving at the station he was able to get up and go and see a patient. The next day he was seen by Dr. Teixeira Maciel, who then learnt that Dr. B. was subject to fits of quotidian ague—from one of which he was then suffering—and that he had employed arsenical preparations for its treatment. He found that, at the end of the first month of this treatment, Dr. B. began to feel in his knees pains of a rheumatic nature. He said, "I have long suffered from my stomach, and only yesterday I was attacked with vomiting. In reference to my fainting in the train, it was merely a passing vertigo, of no importance. Since yesterday I have not been able to stand without perceiving this sensation. This morning, under a similar attack, I threw myself on my bed, but, by a strong effort of will, I was enabled to overcome it."

Dr. Maciel found the pulse slow (68), irregular, and intermittent, and that since the previous evening, there had been no desire to pass urine. The patient admitted that for some time past his urine had diminished in quantity, and that he had had tenesmus both of the bladder and rectum, with colic and spasms in the bowels. Dr. Maciel considered that these symptoms were indicative of an arsenical saturation of the body, and that it would be imprudent to continue this treatment with such a derangement of the stomach. Devergie advises that Fowler's arsenical solution should always be taken with great caution, and that the dose should be only very gradually increased, never exceeding sixteen drops daily. Its use should be discontinued so soon as any unusual or abnormal symptom makes its appearance—such as cramp, congestion, headache, or a sense of weight and uneasiness in the stomach. The continuance of the arsenical medicine after any of these symptoms are manifested is attended with the greatest risk. He advised Dr. B. to lay aside the solution, and resort to the use of tonics and cordials associated with diuretics. His patient was only half convinced when Dr. Maciel left him. The advice came too late. It was given at nine o'clock in the morning, and an hour afterwards Dr. B. was seized with another fit of syncope, in which he died.

Dr. Maciel ascribed death to the effects of the injudicious and long-continued use of the arsenical solution. The supposed rheumatic pains in the joints were the first warning; these were followed by vomiting, tenesmus, diminution of the urinary secretion, colics, fits of coma, and vertigo, all of these obvious signs of the saturation of the system with arsenic (arsenicism). Dr. Maciel makes use of this unfortunate case to advise practitioners to adopt more minute precautions in the therapeutical use of arsenical preparations. Among these he recommends by preference the arseniate of soda, which he prescribes in the form of powder, each packet containing half a milligramme (.0077 grain).

Dr. Rey, in reporting this case, says that Fowler's arsenical solution, according to the foreign formulary of Laennec, contains 1 per cent. of arsenious acid, or 1 centigramme per gramme, and that it is always prescribed in drops. He considers this to be a dangerous proportion of arsenic, for a slight inadvertence might give rise to poisoning. Pearson's arsenical solution contains 1 centigramme of arseniate of soda in six grammes of liquid, and Boudin's solution contains 1 gramme of arsenious acid in 1000 of liquid. These solutions are preferable to Fowler's, as the doses are more easily regulated.

[We believe with Dr. Maciel, that this was a case of chronic poisoning with arsenic, and that the symptoms described gave quite sufficient warning to withdraw the medicine. Considering the extent to which the use of Fowler's solution is carried in medical practice, cases in which injury is done by it seldom present themselves, and fatal cases are very rare. In fact there is, we believe, only one instance recorded in which this solution has destroyed life under medicinal use. This seems to furnish a sufficient answer to the objections taken by Dr. Maciel to the employment of Fowler's solution as a medicine.

Dr. B., who lost his life on this occasion, took, we are told, twelve drops of the solution twice daily. This would be equivalent to one-tenth of a grain for each dose, or one-fifth of a grain daily. Taken in this proportion for three months, it would amount to a total quantity of eighteen grains. These were large daily doses to be continued for so long a period, and elimination should have been very active in order to prevent a fatal accumulation of arsenic in the system.

The facts of the case, however, show that elimination was by no means active. The urine, which is the principal medium for the elimination of arsenic, had for some time fallen off in quantity, and this indication of the action of arsenic was unheeded by Dr. B. Orfila and others have shown that in the acute form of poisoning one of the fatal indications is the suppression of urine. *A fortiori*, this failure in the action of the kidneys would have a powerful influence in chronic poisoning. Dr. B. no doubt thought that he had kept within reasonable medicinal doses; but the fifth of a grain of arsenic daily, represents, unless duly eliminated, a fatal dose in ten days. It is most probable that he did not give his mind to the subject of elimination at all, and did not connect the secondary symptoms from which he suffered with chronic poisoning by arsenic. Hence such a quantity of the poison was allowed to accumulate in the system, as to produce fatal effects through the head and the brain.

In the only instance recorded in which this solution proved fatal to life, a woman took half an ounce of it in five days, and died from the effects. This corresponded to two grains of arsenious acid in the whole, or two-fifths of a grain per diem, double the quantity taken daily by Dr. B. This case terminated fatally in five days, while that of Dr. B. did not prove fatal until after the lapse of twenty-three days.

There is reason to believe that in the medicinal use of these powerful agents, which fall under the class of poisons, medical men look more to the dose given at any time than to the powerful effects of accumulation as a result of imperfect elimination. There are many who consider that they are safe so long as they do not exceed a medicinal dose; but the case of Dr. B. clearly shows that this is no criterion of safety. A person may die from medicinal doses continued for too long a period, as well as from a large dose given at once.]—*London Med. Record*, Feb. 15, 1879.

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JUNE, 1879.

Anatomy and Physiology.

The Variations in the Hæmoglobin of the Blood.

LEICHTENSTERN has investigated the amount of hæmoglobin contained in the blood in health and in various diseases by means of Vierordt's method of quantitative spectrum analysis. The blood was obtained from the finger, and mixed with a trace of caustic soda, without which the blood which contains many white corpuscles is too opaque. He has found that the blood of healthy new-born children contains the largest quantity of hæmoglobin. The quantity sinks pretty quickly, so that in ten or twelve weeks the average of adult life is reached. It then falls gradually, and reaches its lowest point at the age of six months to five years. From six to fifteen years it rises a little, and more considerably after the fifteenth year, so that between the twenty-first and forty-fifth year the second highest point is reached. It then again falls. Over sixty years of age the amount of hæmoglobin again rises. Sex makes a difference over ten years of age, the blood of females being a little poorer in hæmoglobin than that of males. Differences of constitution and of general nutrition appear to make no recognizable difference, only in four very obese persons the quantity was strikingly small. Hourly observation made on the experimenter himself during six days showed, with some probability, that four to six hours after food there is a striking fall in the hæmoglobin, probably due to a dilution of blood with chyle. Abundant ingestion of water caused in the healthy no alteration in the amount of hæmoglobin. On the other hand, it caused, in a woman suffering from nephritis, a slight diminution, together with an increase in the œdema. The withholding of liquids in a non-febrile case of pleurisy caused on two occasions an increase in the amount of hæmoglobin, although the exudation remained unaltered, and the urine became scanty. A course of sweating, by hot baths, in a patient suffering from lumbago, caused no distinct change. Febrile diseases, pneumonia, scarlet fever, acute articular rheumatism, epidemic cerebro-spinal meningitis, yielded no noteworthy result, and certainly no regular diminution in the amount of hæmoglobin. In typhoid there was no notable change in the first weeks of the disease. During the convalescence from febrile diseases, with protracted wasting, a diminution showed itself at last. In a case of fatal apyrexial ileus, a concentration of the blood caused an immense increase in the amount of hæmoglobin, amounting to more than 30 per cent. In phthisical patients the quantity of colouring matter was as a rule diminished, but in some cases it was normal. In cancer a diminution was always found, the only exception being a concentration of the blood through vomiting. A diminution was constantly present in gastric ulcer. Chronic heart disease showed almost constantly a diminution. In emphysema and diabetes mellitus the results varied. Chlorosis constantly showed a difference, and so also did leucocythæmia. Progressive pernicious anæmia always

presented the greatest diminution met with in any disease. Energetic treatment of syphilitic patients with mercury, in which the weight of the body fell, caused a diminution in the amount of hæmoglobin, which again rose after the cure.—*Lancet*, April 12, 1879.

Accelerator Nerves of the Heart.

Acceleration of the pulse is produced by stimulation of the nerve which unites the last cervical ganglion of the sympathetic trunk with the first thoracic ganglion. Drs. STRICKER and WAGNER (*Medizin. Jahrb.* Heft 3, 1878), to discover the real origin of these accelerating fibres, isolated the sympathetic trunk in the abdomen of a dog, by cutting all the afferent branches, and then stimulating it at the sixth thoracic ganglion. The effect of this stimulation is due to the action of the current upon the nerve already spoken of, which is known as the loop of Vieussens. If ligatures be applied above and below this loop, the upper segment alone remains sensitive to stimuli. The acceleration is the more marked the nearer the electrodes are placed to the loop of Vieussens; it is therefore supposed that the accelerating fibres increase in number from below upwards. Further to show the origin of the accelerating fibres, the authors cut the *vagus*, and noticed an acceleration of the pulse, which was lessened after section of the two loops of Vieussens, though the heart-beats were still slightly more rapid than at the commencement of the experiment. The acceleration following section of the *vagus* is caused by the accelerating tonic effect of the medulla, the existence of which proves that the fibres of the loop take origin from the medulla. On excitation, therefore, of the medulla, the authors have been able to exhibit an acceleration of the heart-beat; and they obtained a similar result, but more slowly, and only when the blood pressure had risen considerably after section of the *vagi*. The acceleration produced by stimulation of the medulla is therefore due to stimulation of the accelerator fibres, and to an increase in the blood-pressure. In short, then, the accelerator nerves arise from the cervical cord, pass downwards, and then upwards, in the form of loops, to the six upper thoracic ganglia, and unite at the loop of Vieussens. The function of the accelerating nerves is to counteract the normal influence of the inhibitory nerves. The two sets of nerves are therefore antagonistic to each other. The authors deny the statement of Baxt that the heart is insensible to the influence of the accelerators, after stimulation of the *vagus*.—*London Med. Record*, April 15, 1879.

Materia Medica and Therapeutics.

Physiological Action of Peroxide of Hydrogen.

Dr. PAUL GUTTMANN of Berlin has repeated the experiments of Assmuth and Schmidt on animals with a solution of peroxide of hydrogen of 1006 specific gravity. This solution has long been used for bleaching purposes in this country, and is very permanent. The injection of four cubic centimetres under a rabbit's skin immediately caused severe dyspnœa, clonic convulsions, and death followed in a few minutes from asphyxia. The cause of the asphyxia, which Dr. Guttman has been the first to explain, is the development of innumerable bubbles of gas in the right auricle and ventricle, so that the blood froths just as if air had entered by the veins. Microscopic examination of the pulmonary circulation in curarised

dogs injected with the peroxide, showed that the bubbles of oxygen due to the decomposition of the peroxide never penetrated the branches of the pulmonary artery. Dr. Guttman has found that if he injects one syringeful or three-quarters of a cubic centimetre of peroxide solution into one side of a rabbit's abdomen, and two syringefuls of a 20 per cent. solution of ferrous sulphate simultaneously into the other, the animal does not die, though three-quarters of a cubic centimetre is the lowest fatal dose. Hence, he concludes, that at least part of the oxygen liberated from the peroxide combines with the sulphate, and that the remainder is insufficient to obstruct the circulation and cause asphyxia, for, under ordinary circumstances, while three-quarters of a cubic centimetre kills, one-half of a cubic centimetre does not. Dr. Guttman has, like Thénard and Schönbein, observed the powerful antiseptic action of the peroxide. Ten cubic centimetres of urine mixed with one cubic centimetre remained nine months without putrefying. To this action is probably due the good effect of the peroxide on soft chancres noticed by Stöhr in 1867, and confirmed by Guttman. Guttman has, also, tried the peroxide in chronic dyspepsia (ten grammes to 200 of water—dose, half an ounce three times daily), and with good results. Dr. Richardson, it may be remembered, in 1862 published a number of observations on the subject, in which improvement of the digestion was one of the main features. In the discussion on Dr. Guttman's paper at the Berlin Medical Society, Dr. Frankel stated that he had found the peroxide solution rather weaker antiseptically than carbolic acid. He had used it with benefit as a mouth-wash in a case of fœtor oris. Guttman's experiments have been repeated with similar results by Dr. E. Schwerin (*Virchow's Archiv*, lxxiii, 37). Slight divergencies of opinion between their results, and, generally speaking, between those of other observers on the same subject, seem all explicable by the solutions used not being of uniform strength.—*London Med. Record*, April 15, 1879.

Action of Digitaline on the Circulation.

The following are the results of CAVAZZINI's observations, which have been published in the *Annales d'Omodei*, 1878, No. 245, p. 115:—

1. The action of digitaline on frogs is manifested on the heart, particularly on the ventricle, by exciting the muscular fibres in proportion to the dose.
2. One or two drops of the solution, according to the season, accelerate the movement; six to seven will bring on tetanic contractions of the ventricle.
3. The digitaline augments the tone of the cardiac fibres, and lessens the number of the contractions, by reducing them to an infinitely small number.
4. The auricles are hardly, if at all, excited by the digitaline, the systolic contraction is not diminished in the same proportion as in the ventricles.
5. The diastole of the ventricle does not seem to be quickened, but rather subordinate to the action of the muscular fibres of the auricle. These fibres are often apt to enlarge considerably, which is followed by paralysis, so that it is obvious that they must remain inactive.
6. Some physiologists assert that the myocardium during the systole does not lose the blood which it contains; this assertion is untrue, as is proved from the pallor of the fibres which has often been observed.
7. Digitaline accelerates the peripheral circulation in proportion to the time and the quantity which has been employed for the experiment; the acceleration is due to the increased force of the impulse of the heart. When the ventricular contractions begin to slacken, and the ventricle becomes tetanic, the circulation diminishes first, and then ceases altogether.
8. The capillaries dilate, though not much, and the circulation may be accelerated, provided the drug does not prevent the ventricle from contracting rhythmically during the diastole.
9. It appears from the above that the action

of digitaline is principally localized on the heart, and that its action on the vessels is only a secondary one. 10. It seems as if digitaline augmented in the respiratory substance the faculty of absorbing oxygen. 11. The opinion of the Berlin school, that digitaline, when given in small doses, is stimulating, and exciting when in large doses, has not proved to be correct. This drug always stimulates the cardiac energy and dilates the vessels; if given in a toxic dose, it produces tetanus and the rupture of the heart. 12. The action of digitaline may be summed up in the following words: It prevents the cardiac systole from growing too weak, it gives a new impulse to the peripheric circulation by increasing the *vis a tergo*, and dilating the capillaries; and finally it may be found very useful in affections which are complicated with insufficient oxidation of the blood. —*London Med. Record*, April 15, 1879.

Use of Salicylic Acid.

Dr. WILLIAM SQUIRE, in a communication to the *British Medical Journal* (April 26, 1879) on the two independent effects of salicylic acid, the germicide and antipyretic, says: there are many conditions of disease where it would be well to make use of both these actions, and some where the antipyretic is distinctly aided by the germicide effects of the acid, so that fever is lowered more certainly and quickly by its use than when the more easily administered soluble salt is prescribed. This is well seen in scarlatina anginosa, and sometimes in diphtheria, whether the acid be conveyed to the throat directly, or be suspended in mucilage, or by means of glycerine, its most convenient solvent. Half an ounce of glycerine, when hot, will dissolve half a drachm of salicylic acid. This is stronger than necessary, and, when cold, will either deposit some of the acid or may become solid; in either case, it will redissolve when heated, and can be mixed in a warm spoon with an equal quantity of hot water, and given in small quantities with or without any drink afterwards; or, a solution of five grains of salicylic acid to the drachm of glycerine can be used, either alone or given with a little cream. In this way, not only are the mouth and throat cleansed, but the fever is soon lessened; it is only while the fever is high that the strong doses need be continued. In cases of moderate severity, it suffices to prescribe this weaker glycerine solution, and to order half a drachm or a drachm to be mixed with an ounce of water at the time of administration. The latter is quite strong enough for an adult, and is better followed by a drink of water. Or half an ounce of the glycerine in half a pint of water forms a suitable mixture; this sipped frequently or given as a drink every two or three hours, diminishes fever and improves the throat. Such a solution of two grains to the ounce is efficient as an antiseptic, and can be used in spray. Where a general antipyretic effect is desired, salicylate of soda may be given at the same time, fifteen grains being equivalent for this purpose to ten grains of the acid. It is contraindicated where there is renal congestion or any albuminuria, as most of the acid is excreted by the kidneys. This method of administration is more suitable to scarlet fever than to diphtheria, where the necessity for giving iron restricts the use of salicylic acid to the intervals when the stronger form can be applied in small quantities frequently. In erysipelas, no form of salicylic acid is advisable; not only would it interfere with the use of iron, which is then essential, but there is no febrile condition over which it has so little control as erysipelas. In typhoid fever, the use of salicylic acid presents some advantages over that of salicylate of soda. The glycerine solution is suitable for administration in diabetes, salicylic acid having a power of checking the formation of sugar not possessed by salicylate of soda. For this purpose the acid is required in full doses; it might take the place

of carbolic acid in rendering diabetics more tolerant of operation and less liable to suffer from boils and from suppuration. In catarrhal sore-throat, or at the commencement of a common cold, the weak solution of salicylic acid is beneficial. For checking the febrile reactions in phthisis it is also preferable. It also acts as a sedative to the pneumogastric, and the weaker glycerine solution in water relieves cough. As a remedy in whooping-cough, this solution may be found as effective and more convenient than the laryngeal insufflation of the powder. Hay-fever is checked by dropping a grain to the ounce solution into the nares. The great obstacle to the freer use of salicylic acid is its sparing solubility in water; this difficulty has been overrated. Solutions of one or two grains to the ounce keep clear or deposit a few flocculi only, when theoretically all but one-fifteenth of a grain should separate.—*British Med. Journal*, April 26, 1879.

Salicylic Cotton, Benzoic Cotton, and Liquor Aluminæ Aceticæ as Antiseptics.

To prepare salicylic cotton (five per cent.), PAUL BRUNS directs (*Pharm. Centralblatt*), the saturation of 100 parts of cotton with 400 parts of a solution in alcohol of salicylic acid five parts, and castor oil two parts (or castor oil and colophony each one part). In a precisely similar manner the benzoic cotton is prepared, substituting benzoic for salicylic acid. The amount of salicylic or benzoic acid may be increased up to ten per cent., the quantity of castor oil being also correspondingly increased. A solution of acetate of alumina is recommended by the author as superior to thymol, or carbolic, salicylic, or benzoic acid for disinfecting purposes, for dressing wounds, and for permanent antiseptic irrigation. He prepares the solution by dissolving in 500 parts of water 150 of alum, and mixing this with a solution in 500 parts of water, of 240 parts of crystallized lead acetate, filtering, and adding water sufficient to make the filtrate measure 2000 parts; this solution, which contains three per cent. of alumina acetate, he frequently dilutes for use with from three to six times its bulk of water.—*London Med. Record*, April 15, 1879.

Febrifugal Effects of Bromhydrate of Cinchonidine, administered Hypodermically.

GUBLER says (*Journal de Thérap.*, No. 1, 1879) that cinchonidine contains in a very high degree the febrifugal properties of quinine, while the bromhydric acid imparts to the salts greater sedative properties, and diminishes their tendency to poisoning. The bromhydrates of cinchonidine are specially harmless to the subcutaneous cellular tissue. Acid bromhydrate is preferable to neutral bromhydrate, because it dissolves more easily. A solution of dibromhydrate of cinchonidine in the proportion of one to five is stable, and sufficiently concentrated, and an injection of one cubic centimetre of this solution, which contains two decigrams of the active principle, if repeated twice daily, has the same effect as one to two grammes of sulphate of quinia taken by the mouth.—*London Med. Record*, April 15, 1879.

Chloramyl as an Anæsthetic.

Chloramyl, a combination of pure chloroform and nitrite of amyl, has recently been tried as an anæsthetic, at the London Hospital, by Mr. Rivington, Surgeon to the Hospital. The first patient to whom it was administered was a healthy man, and the operation merely the slitting up of a sinus. The patient inhaled the drug freely and comfortably, with no symptom of choking; the pulse increased almost immediately in volume and rapidity; the respirations were more frequent and less deep. In three minutes, the patient began to struggle, and, within four

minutes of the commencement of the administration, the pulse suddenly failed, so as for a moment to be hardly perceptible; the respirations became hurried and shallow; the jaw appeared to be closed by spasm; the lips were blue; the eyes staring and suffused, the left pupil much dilated, but the right of moderate size (about the dimension of a No. 8 catheter); the breathing was very noisy and stridulous, as if due to laryngeal spasm. With difficulty the mouth was forced open. These symptoms passed off rapidly, and in about the space of two minutes the patient came to himself, without passing through the talkative stage usually observed when chloroform is given. The slight operation needed was performed while he was quite conscious. He himself thought that the anæsthetic had caused him to feel the pain less acutely. The next patient anæsthetized was a young woman, aged 25, suffering from extensive warty growths of the vulva. Mr. Rivington cut away the growths, arresting hemorrhage by pressure and the occasional application of the actual cautery. She was in good health. She inhaled the chloramyl comfortably, and in five minutes was fairly under its influence. The pulse remained throughout full and regular, the respiration easy. As in the previous case, she regained consciousness without passing through the stage of disquiet usually observed. The third operation was for the removal of necrosed bone from the hand; the patient was a healthy man. In six minutes he was perfectly anæsthetized. His pulse during the first minute became intermittent, the intervals of intermission decreasing in frequency until the third minute, when the pulse was perfectly regular. The respirations were throughout easy. The patient struggled a great deal, but came to himself without any display of restlessness or talkativeness. In each instance, the patient was free from any cardiac mischief. The drug was administered in the same manner as is adopted at the hospital for the administration of chloroform, but the quantity used was greater. It was observed that, when once the patient was well under the influence of the chloramyl, small quantities of the drug were sufficient to keep up the narcotic effect. All the patients recovered comfortably, without vomiting or other bad result. In the two latter patients, the pupils remained throughout quite equal, the eyes turned up, with lateral nystagmus, the globes retaining perfect parallelism. The drug was obtained from Bass, Brothers & Co. Chloramyl was first advocated by Dr. R. Sandford, in a letter to an American journal. From experiments upon animals, he has come to the conclusion that this combination is far safer for general anæsthetic purposes than chloroform uncombined, and, "so far as tried, it seems to be fully as safe as sulphuric ether, and far more pleasant in its administration, possessing all the advantages of pure chloroform without its dangers." He states that, "in administering chloramyl, the patient's face becomes flushed much sooner than with chloroform; but press the drug right along, and the countenance does not become pale. Both heart's action and respiration are kept up thoroughly throughout the anæsthesia." Dr. Sandford alleges that chloramyl prevents the approach of danger both by syncope and by asphyxia. The formula he uses is: Squibb's chloroform, lb. j; nitrite of amyl, two drachms. He suggests that the amount should be diminished in long and tedious operations. Mr. J. T. Clover, in reviewing Dr. Sandford's communication in the January number of the *London Medical Record*, stated that he made a trial of this mixture in ten cases. The anæsthesia was quickly produced, without much excitement in any case; but three suffered nausea afterwards, and two of them vomited and remained for an hour much in the same condition as if chloroform alone had been given. It appears to be similar in its action to that of a mixture of chloroform and ether; but as the vapour is less pungent, the patients generally breathe it without resistance. It was much too soon (Mr. Clover thought) to pronounce upon its relative safety.—*British Medical Journal*, April 26, 1879.

Metallotherapy.

The marvels of metallotherapy will never cease. Dr. DUPUY relates, in a recent number of the *Gazette Obstétricale*, a case of retention of urine, in which he made a successful application of metallotherapy. The case was that of an hysterical woman, aged 40, who had been treated for several years for permanent and painful spasm of the neck of the bladder, accompanied by a little metritis and accentuated hyperæsthesia of the left ovary. For the last year, she had retention of urine, which necessitated a five months' daily catheterization; she at last was relieved of this by antispasmodic treatment and by the employment of suppositories of belladonna. The cure was continuous till the month of last November; then retention reappeared, more painful and more persistent than before. The introduction of the sound provoked a spasm of the muscles of the urethra, and immediately awoke in the patient a sensation of heat and violent pain, frequently provoking an attack of convulsion with loss of consciousness. The patient had arrived at such a point as to have so much horror of the catheterization as not to drink, and to endure the torture of thirst for two or three days at a time in order to put off the moment when the use of the sound would become indispensable. Things were at this pass when, after having exhausted all the series of antispasmodics, M. Dupuy had the idea of having recourse to metallotherapy in order to discover the metal suitable to the patient, who was at this time suffering from convulsive spasms of the limbs. He ascertained that gold, when applied to the skin, increased the convulsions, whilst other metals, such as copper, steel, and silver, made them disappear immediately. M. Dupuy then applied over the vesical region and round the upper part of the thighs the metallic bracelets of Dr. Burq; and an hour afterwards the patient passed urine abundantly, and without pain. From that moment, the catheter was no longer called for; when the urine did not pass, the armatures were applied, and micturition occurred naturally, although sometimes with pain. The ovarian hyperæsthesia had also disappeared, and the patient could swallow more easily, thanks always to the metallic bracelets.

M. LANDOUZY relates an extremely curious example of metalloscopy or metallotherapy observed by him in the wards of Dr. Hardy. A woman suffering from severe hysteria, convulsions, contractions, etc., presented, at the time at which these observations were being made, attacks of meteorism provoking very severe abdominal pains. With the view of calming these pains, M. Landouzy, after having previously bandaged the eyes of the patient, tried upon the belly the application of a magnet, which at first only gave rise to a sensation of disagreeable cold; but about two moments later there occurred in the right wrist and labial commissure some slight convulsive movements; at the same instant, the speech of the patient, who up to that time had continued to answer questions which were being put to her, became slow and heavy, like the conversation of a person who is falling asleep, and then the patient became silent; all efforts made to awake her by all sorts of means were in vain; she remained plunged in profound sleep, with general anæsthesia and muscular resolution. Seeing that this state much resembled natural sleep, except that absolute anæsthesia continued, the magnet was withdrawn; at the end of six seconds, the same movements occurred in the face and the wrist as those already observed, and the patient, whose eyelids had been unbandaged, opened her eyes, and seemed to come out of a profound sleep; at this moment, it was ascertained that sensibility had returned all over the body. A new observation was then made; the eyes of the patient were at first simply bandaged, without making use of the magnet, and for more than ten minutes nothing particular occurred. At the end of this time, a portion

of the magnet was put in contact with the anterior surface of the left forearm ; about a minute afterwards, there occurred what had been observed when the magnet had been applied on the first occasion ; that is to say, slight spasmodic movements in the wrist and in the right labial commissure. Then the patient became insensible to all means of stimulation, and seemed to fall profoundly asleep, respiration and circulation remaining as they were before the experiment. It sufficed to remove the magnet in order that at the end of from six to eight seconds the patient, whose eyes this time had been bandaged, awoke, when, after having presented the same slight clonic movements which have been already mentioned, she asked if they were not going to take off her bandage. This being taken away, the magnet was replaced in contact with the abdominal walls, and for a quarter of an hour the patient conversed tranquilly when interrogated ; then, while still conversing, M. Landouzy closed her eyelids with his fingers and thus kept the eyelids closed ; two minutes had not elapsed, when the patient fell again into a state of complete sleep with general anæsthesia. This time, instead of withdrawing the magnet, it was left in position, and the patient's eyes were drawn open. She immediately came to herself, said that she had not dreamed at all and experienced nothing during her sleep, but felt something heavy and cold on the stomach. This experiment was repeated a great number of times, and this truly lethargic sleep was always produced under the same conditions, viz., application of the magnet on a given point of the body, the patient having her eyes closed and covered ; the patient always returned to herself and recovered sensibility as soon as the magnet was withdrawn if the eyes remained closed, or as soon as the eyes were opened if the magnet still remained in contact with the skin. We publish to-day some interesting contributions to the knowledge of the subject.—*British Med. Journal*, April 26, 1879.

Waterproof Paper.

Dr. W. W. KEEN, Surgeon to St. Mary's Hospital, Philadelphia, describes (*Med. and Surg. Reporter*, April 19, 1879), some experiments which he has recently made with a waterproof paper manufactured at his suggestion by Messrs. Seabury and Johnson, of New York, out of a combination of rubber and paraffine, with a view to its use as a substitute for oiled silk and similar articles. Dr. Keen finds that the advantages of waterproof paper are—

1. It is impermeable to water for 72 hours, at the least, even after being repeatedly creased and crumpled.
2. It is impermeable to air in similar conditions.
3. It does not absorb water or discharges.
4. It may be used with the hottest dressings that can be borne.
5. It is flexible, and yet strong enough for all ordinary wear, especially as it will only be used once.
6. Its cost is many times less than that of other similar dressings.

Medicine.

Histology of Tubercle.

BAUMGARTEN (*Centralbl. f. die Med. Wissenschaft.*, March 30, 1878) has already drawn attention to the constant presence of a granulation tissue, contain-

ing epithelioid and giant cells, around ligatures placed on vessels, but he could not recognize nodules analogous to those of tubercle. More recently, he has observed around foreign bodies, such as bits of hair, cotton fibres, and the dust which settles in all operative wounds, true tubercular giant cells; there is the same typical disposition of the nuclei at the periphery, the same protoplasm with its dark granules; the cells are sometimes isolated, sometimes surrounded by round or oval collection of lymphoid cells, often surrounded by a reticulum; no vessel could be recognized. No distinction could be drawn between their appearances and those of tubercle, but the growth showed no tendency to caseation or dissemination.—*London Med. Record*, April 15, 1879.

Giant-Cells in Tubercle.

Dr. LUBIMOW states (*Virchow's Archiv*, Band lxxv., Heft 3, p. 71), as the result of his investigations, that giant-cells are independent formations, like other cells, and develop out of a cell by increase of its protoplasm, and multiplication of its nuclei. Their origin is, first, in tubercular peritonitis and tubercular lymphatic glands inside the lymph vessels, and more precisely in their proliferating endothelium. Secondly, in tuberculosis of the testis and in organs composed of connective tissue and gland tubules, they originate in the epithelial cells of these tubules on the one hand, and in the connective tissue corpuscles or the endothelium of their walls on the other.—*London Med. Record*, April 15, 1879.

Traumatic Meningitis treated by Cold Douche.

At a late meeting of the Clinical Society of London (*Lancet*, April 5, 1879), Mr. KEETLEY read notes of a case of severe traumatic meningitis, treated in the stage of coma by cold douche for two hours and a half. The patient was a groom, aged 30, who was thrown from his horse into a ditch, alighting on his head. There had been a short period of insensibility, but on admission to the hospital he was conscious and irritable. The accident had happened at 5 P. M. Thirteen hours after, having passed a good night, he was seized with a convulsive attack, confined to the left side. During the day he had several similar seizures, in which his eyes were strongly turned to the left; in the intervals he vomited occasionally. On the third day he remained in much the same condition, but on the fourth the right side was affected; and after the attack this side was found to be paralyzed. Towards evening he improved considerably; and on the following day it was noted that his face was heavy, his pupils contracted, and he resembled a patient suffering from opium-poisoning; the temperature was 100°. On the sixth day the coma was increased; temperature 100°, pulse 120. The cold douche was applied to the head for two hours and a half, when the temperature was 99°, pulse 70; his face became rather blue; he could answer questions, but had a fatuous expression, and his answers were often childish. After this time he steadily improved, and ultimately recovered. A fracture of the posterior fossa was diagnosed, extending to the base of the skull; the severity of the injury, and the acuteness of the meningitis appearing to point to such a condition. The epileptic seizures at first appeared to point to an injury of the dura mater over the seat of violence, and the later attacks on the opposite side to an extension of the inflammation to the meninges of the other hemisphere. There was no difficulty in regulating the time during which the application of the douche was beneficial. The lividity was only noticed after more than two hours of this course of treatment. It should be added that he had previously been treated by an ice-bag to the head, and the administration of aperients.

Dr. STURGE said it was rare for epileptiform attacks, after being present on one side, to involve the other and remain confined to it; but he had lately seen such a case. A woman fell downstairs, striking her head, and was brought to hospital in a semi-comatose state. In two or three days she had epileptiform convulsions confined to the left side, the temperature rising to 106° in each fit. The convulsions recurred every half hour, appeared on the right side, and after a time became confined to the right arm and side of face. After a large number of fits she began to recover power and to talk, and was progressing favourably. The convulsions thus subsided first on the side of the body on which they first appeared.

Mr. GODLEE thought the ice-bag would be quite as efficacious as the cold douche, and he had seen a case where, after two days' application of ice, the fits ceased. In another case of convulsions after injury—convulsions which began on one side and then affected the other—arachnoid hemorrhage, and not meningitis, was found after death.

Case of Aphasia caused by Anæmia.

A great many cases of aphasia have been lately published, their etiology having always been more or less clear. In most of these cases there had been either an apoplectic stroke or some traumatic lesion, either of the frontal bone or the anterior superior surface of the parietal bone, the underlying parts of the brain being always found much altered at post-mortem examinations. The case described by Dr. KOCH in the *Berl. Klin. Woch.*, February 24, 1879, differs from those which come under notice generally, in that it does not originate in any lesion of the brain. It is brought on directly by hyperæmia of the brain, has been noticed when the patient was in an anæmic state, is transitory, and does not leave any evil effects behind it. The patient, a medical man, aged 36, had always enjoyed good health; there was no predisposition to nervous disorder in his family, except, perhaps, a slight tendency to despondency inherited from his mother. From the time he had first begun to practise he suffered occasionally from hemicrania and a kind of dull headache, which generally, however, vanished towards the afternoon. During the last years he had been rather irritable, and looked pale. That is all his previous history. One day towards the end of August, 1873, the patient had his first attack of aphasia. He had been vexed about something, when he suddenly experienced a slight feeling of giddiness, and numbness about the mouth and in several fingers, which was followed by the utter impossibility of pronouncing certain words. His tongue was not paralyzed, neither was there any loss of consciousness; he felt very much troubled about this new symptom, and shrugged his shoulders because he could not make himself understood by his wife. This phenomenon lasted for about a quarter of an hour; the patient lay down quietly, without making any further attempts to speak, and half an hour later he had recovered his powers of speech, and only felt a slight attack of hemicrania.

During the whole of the following winter the patient suffered more than ever from his hemicrania, but the next attack only came on in the spring of 1874, and was frequently repeated from that time, often recurring several times daily. The patient frequently could not find the right word in writing; the symptoms were always the same, and were repeated in the same series; the fit never lasted above half an hour. In August, 1874, the patient went to St. Moritz, in the Engadine, where he drank daily several glasses of chalybeate water, and took baths. He felt much better there, had only one more attack at the beginning of his cure, and was even able to undertake several long excursions to the mountains. He

remained well for the rest of the year, till the spring of 1875, when he again had a few slight attacks; they stayed away till September, 1876, when five more occurred; these were the last, and the patient has been free from them ever since. Two out of the five seem to have been brought on by chills, one of them being followed by a severe cold, whilst three others were, as usual, preceded and followed by headaches.

Remarks.—1. It is evident that this case of aphasia, together with the accompanying circumstances, was caused by anæmia; the good effect of the chalybeate waters seems to vouch for this. 2. The direct cause of every attack was evidently increased rush of blood to the nervous centres. This appears from the giddiness and headache, and that they were often brought on by chills, once even with the symptoms of angina. 3. The aphasia was evidently of central origin. The patient could not find the word he wanted, and therefore could not write it; in attempting to speak, he would use other words unintentionally. 4. Similar peculiar paralytical phenomena have often been observed to occur in chlorotic and hysterical patients. But there is neither chlorosis nor hysteria in our case, only a slight tendency to melancholy and anæmia, the constant recurring of the same symptoms for four years also shows that they cannot be classified under the head of hysteria, which presents the most changeable and various phenomena, as all medical practitioners know well. Occasionally, it is true, the symptoms would vary a little, *e. g.*, there was once or twice a slight feeling of formication in the fingers or around the mouth, but that is all. The sensation of formication in the fingers is a symptom of anæsthesia of the plexus brachialis, which has its seat in the centre in the spine, and is propagated into the plexus brachialis; the aphasia is a symptom of a transitory psychical weakness in the centre of the brain. This curious case might perhaps be explained by saying that a sudden rush of the blood to the brain and spine, owing to different circumstances, may on its way have constantly met the same weak portions of the brain or coats of the vessels, which could not resist the increased pressure, and thereby gave rise to the symptoms detailed, whilst healthier portions of the brain or vessels were either not affected by the rush of blood, or did not suffer beyond the symptoms of headache or vertigo.—*London Med. Record*, April 15, 1879.

Partial Epilepsy apparently due to Lesion of one of the Vaso-motor Centres of the Brain.

At a late meeting of the Clinical Society of London (*Lancet*, April 26, 1879) Dr. ALLEN STURGE read notes of a case of partial epilepsy apparently due to lesion of one of the vaso-motor centres of the brain. The patient was a child, now seven years of age. The family history was good; no hereditary nervous diseases. There was an extensive mother's mark on the right side of the head and neck, and one patch over the left frontal and temporal region. All the parts affected on the right side were larger than the opposite. The right eye was affected; and he read notes taken by Mr. Nettleship on the condition of this eye, from which it appeared that the palpebral fissure and the pupil on this side were larger than on the other, and the sclerotic more vascular—a state of sclero-nævus. This eye was myopic, probably because of its increased size, the lens presumably being adapted for a smaller eye; the choroid and optic nerve were redder than on the other side. The epilepsy began by twitching, lasting for ten or twelve minutes, at first confined to the left side. Several such fits occurred every day, but there was at this time no loss of consciousness. Gradually the fits spread to the other side, and in eighteen months or two years the child began to lose consciousness after the attacks. The fit began with a peculiar sensation in the left

palm, followed by convulsions, which soon became general. The left side remained weaker than the other. This state of things was considerably improved by bromide of potassium. In order to explain his theory about this case, Dr. Sturge gave a summary of his views as to the mechanism of an epileptic convulsion, and concluded that in this case the epilepsy proceeded from and depended upon a condition of the right hemisphere comparable to that observed in the right eye and the skin and mucous membrane on the right side of the head.

Dr. GLOVER criticized the theory of there being a "port-wine mark" brain as being purely speculative, and hardly worthy of discussion. It was negatived by the fact that on the skin the mark extended over the left side of the forehead. It was usual for epilepsy to commence in a unilateral manner before becoming general, and he considered that more evidence was wanted before the view in question could be accepted. It was no more to be entertained than was the mother's statement of a fright towards the end of her pregnancy as explaining the extensive marking on the skin.

Mr. GOULD said that five years ago he saw a young woman, twenty-one years of age, who presented an extensive "port-wine mark" on the face, and also on the chest, arms, and slightly on the legs, the distribution of the mark being fairly symmetrical. She was subject to fits, thought then to be hysterical. There was one curious feature in the case—viz., that the right side of the body was much smaller than the left, the growth of the limbs showing great differences.

Mr. FURNEAUX JORDAN had published a case bearing out the fact that parts in the neighbourhood of nævi may be enlarged without sharing in the nævoid condition. It was a case of a large pendulous nævoid mass on the radial side of the forearm, the radius being at least twice its natural size, so that the forefinger and thumb were very large. He attributed this to the increased circulation due to the pressure of the nævus.

Dr. POORE said they must be all obliged to Dr. Sturge for the theory he had advanced, although, seeing how common fits were in children, it might be difficult to accept it without more evidence. Did any change occur in the nævus at the time of the fits? If a "port-wine mark" was present on one side of the brain, it might interfere with the development of the brain, and in that case some difference in size between the right and left limbs might have occurred.

Dr. STURGE admitted that it was a very unusual thing to suppose that a "port-wine mark" existed on the brain, and he would not have raised the question did it not seem probable. He had never seen a case like this, and he did not see why, as the condition existed on all the tissues available for examination on the right side of the head and face, it should not also be present within the skull. The extension on the left side of face was very limited. He had never seen the child in a fit, but directly after a fit the mark shows scarcely any change. There was no difference in the size of the opposite limbs, although she is weak on the left side.

Case of General Anæsthesia.

STRUMPELL reports (*Med. Chir. Centralblatt*, January 17) the case of a patient, a lad aged 16, who had complained previously of repeated fits of giddiness. Nothing, however, could be detected which might have led to the supposition that the brain was affected, except a considerable irregularity of the respiration and the pulse. The fits of giddiness became soon better, when suddenly, without any known reason, the spinal column and the epigastric region became very tender on pressure, and choreiform twitchings and spasms of the extremities were observed. These latter were subsequently restricted to the right extremities. On examining the sensibility of the patient it was found that the right side of the

body was perfectly anæsthetic, the right eye had retained its normal power of vision, but the left one had lost it. Later on, the extensor muscles of the right hand, as well as most of the muscles of the right leg were paralyzed, so that the patient dragged it after him when walking. Other peculiar phenomena then appeared, so that a month later the patient presented the following characteristics: 1. Tactile sensibility of the skin was entirely extinct. 2. All the mucous membranes which are accessible to observation were similarly affected. The patient would drop his food from his mouth when eating; the epiglottis could be touched or irritated without producing any sensation; the catheter could be introduced without the patient feeling it, etc. It seemed, also, as if the sensations of hunger and thirst were destroyed, or very much weakened. 3. The sensations both of smell and taste were extinct, the left eye had entirely lost visual power, and the hearing very much impaired on the right ear. 4. There was a cessation of all muscular sensations. When the patient's eyes were bandaged he could be carried about the room without knowing it. 5. Several of the reflex actions of the skin still existed, as well as those of closing the eyelids, swallowing, etc. Other reflex movements were absent, such as sneezing, drawing deep inspirations when cold water was poured over him, etc.

It was most interesting to watch the patient's gait. So long as his eyes were open he walked pretty well, with the exception of dragging the right leg after him. If told to shut his eyes he would invariably fall down in a few minutes. All the movements of the extremities, those which were paralyzed excepted, were perfectly normal so long as they could be controlled by the patient's eyesight. If this control were prevented, if the normal eye was bandaged, his movements did not become atactic, but extremely undecided in their direction and measure. If the eyes were closed, the patient could neither move his fingers separately nor make any complicated movements with his hands: he endeavoured, however, in such cases, to control his movements as far as possible by hearing.

The question being often asked as to what would happen if the patient's only remaining organs of sense were closed, this experiment was often made, and the seeing eye and hearing ear bandaged. The result was invariably the same; the patient would always go to sleep after a few minutes, he could, therefore be plunged into a profound sleep at any time of the day or night without any difficulty. He could only be awakened by throwing a strong light on his normal eye, or by producing a loud sound close to his hearing ear.—*Lond. Med. Record*, April 15, 1879.

Prognosis in Infantile Paralysis.

In a clinical lecture delivered by Prof. JULES SIMON (*Gaz. Méd. de Paris*, Jan. 11, 1879) at the Hospital for Sick Children, the following points regarding prognosis are worthy of notice. Generally speaking, this disease leaves behind it a greater or less degree of paralysis. In a well-marked case, which has lasted four or five weeks, the cure will never be complete. But this persistent paralysis should not justify us in always giving a grave prognosis. For, though it may be always apparent to the skilled observer, the paralysis may disappear sufficiently to escape the notice of all others, and in other cases it may be remedied by orthopædic apparatus. M. Simon considers that there are three periods in the malady, in which the prognosis may be given in different terms. Quite at the outset, it being impossible to foresee the result, prognosis must be guarded and general. Time is the main element in prognosis now. In the second period, more precision is possible in prognosis. If the paralysis tends rapidly to improve, the prognosis is very serious; but if it persists and spreads, there is a fear of muscular atrophy, fatty degeneration, and consecutive deformity. If the

paralysis is soon accompanied by atrophy, *i. e.*, in from ten or fifteen days to three weeks, cure is impossible, and grave deformity will remain; but if the atrophy comes on slowly, the disease will, at least to a great extent, get well. In other cases, we are in presence of the accomplished fact. The patient is seen in the stage of deformity of infantile paralysis; there is atrophy and shortening of the limbs or club-foot. But even in these cases much may be done to justify a not altogether unfavourable prognosis by the judicious use of orthopædic apparatus. The etiology of infantile paralysis is very obscure. It is rarely seen before the age of six months, or after three years. M. Simon has seen cases which began at the ages of 4, 7, 7½, and even 12 years; but these are exceptional. Sex appears to have no influence. The occurrence of dentition and diarrhœa have been credited with it; lastly, *cold*, and especially staying in a damp place, have appeared to M. Simon to have been the cause in some cases he has seen, so that there would seem to be a rheumatic infantile paralysis.

In 214 children under one year old, among whom 41 were within a month, and 17 within a day old, these last evinced the patellar tendon reflex very markedly. The Achilles tendon reflex was not fully brought out in all the cases of children within one year old; but the patellar reflex was marked in nearly all. The author thinks that this phenomenon is a reflex one, for the distinctness of the symptom decreased with advancing age; although, according to Soltmann, the excitability of the peripheral nervous system gradually increases. This increased excitability is compensated for by the decreased tendency to reflex phenomena.—*London Med. Record*, April 15, 1879.

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Treatment of Neuralgia by Hydrotherapy and Electricity combined.

DUBOIS (*Thèse de Paris*) says in treating neuralgia by electricity, it is best to use the descending current, *i. e.*, the current going from the nerve centre to the periphery. This is less painful, especially if only a moderate number of elements, from thirty to forty, are used. The only general rule which can be established on this subject is, never use more elements than can be borne by the patient without pain. It is better to begin with a weaker dose, and to increase it subsequently, than to run the risk of injuring instead of benefiting the patient. As for the mode of application, M. Dubois recommends that after the sponges have been wetted, the positive pole be applied to the central end of the nerve, and the negative to its peripheric end, or to one of its painful spots. They are then allowed to remain in the same spot for from five to ten minutes, so as not to break the circuit. In order to prevent the electric shock and spare the patient a very disagreeable sensation, it suffices to move the sponges gently towards each other along the skin, and not raise them before having brought them into contact with each other. This proceeding is said to cure all cases of recent neuralgia. Patients suffering from chronic forms must be treated by combined electricity and hydrotherapy. This is, *e. g.*, the method generally used in cases of *tic-douloureux* and sciatica: for the former affection the positive pole of a continuous current is placed on the infraorbital foramen, and the negative pole on the superior cervical ganglion, then a current of about twelve elements is allowed to pass through from seven to ten minutes. The hydrotherapeutic treatment which is applied the same day consists, unless contraindications exist, in a hot-air bath, which is followed by a cold shower bath lasting two minutes. In sciatica the following treatment has proved most successful in a case where the patient had been suffering for two years, without being able to obtain any relief. In the morning the hot-air bath was given, and followed on alternate days by a cold shower bath, a Scotch shower bath being given on the other days. At night the continuous current was applied, applying

the positive pole to the lumbar region, and the negative, first to the nates, then to the popliteal region. This was done daily for ten minutes; twenty-five elements were used. The patient was better in ten days, and quite well in a month.—*London Med. Record*, April 15, 1879.

Glossophytis.

DESSOIS is of opinion (*T'hèse de Paris*, 1878): 1. That the black hue of the tongue and hypertrophy of the papillæ of the tongue are always connected with the presence of a vegetable parasite. 2. That this colouring must be ascribed to the fungus, from which it spreads to the long epithelial sheaths of the papillæ. 3. That the hypertrophy of the papillæ, which exists more or less before the affection breaks out on the tongue, and which proves a fertile soil for the parasite, is principally due, at a later period, to the irritation caused by this cryptogam.—*Lond. Med. Record*, April 15, 1879.

Cases of Retrotracheal Retention-Cysts.

GRUBER (*Virchow's Archiv für Path. Anatomie*, etc., vol. lxxiv. No. 4, 1878) calls "retrotracheal retention-cysts" not the hernia-like pouches of the tracheal mucous membrane, but the "mucous cysts" (Virchow) which owe their origin to the retention of the secretion in hypertrophied retrotracheal mucous glands, the apertures of which have remained open. They are extremely rare. One case has been communicated by Rokitansky in 1838, two cases previously by our author in 1869 and 1875, and now two new ones are brought forward by him. These are all on record. In both the new cases they were only accidentally discovered on dead bodies; but, as one of them had an enormous circumference when filled, viz., 5 centimetres, the author suggests that in cases of operation in the neighbourhood of such cysts, an accidental incision might not be without importance.—*Lond. Med. Record*, April 15, 1879.

Laryngeal Syphilis.

At the close of SECHTEM's lengthy but interesting article on laryngeal syphilis (*Wiener Med. Presse*, Nos. 27, 28, 29, 30, 31, 1878), we find the following directions for its treatment, and, as they represent the present plan in Vienna, we give them in full:—

In recent and mild cases of the disease, likewise where there are superficial *plaques* in the pharynx, or erosions or slight ulcerations in the larynx, inhalations of corrosive sublimate in alcohol and water, as recommended by Demarquay and Schnitzler, are used and highly spoken of. Under this treatment all the least serious of the pharyngeal manifestations quickly disappear; ulcerative processes of any extent will require, in addition, cauterization with nitrate of silver in substance.

In other cases, where secondary symptoms exist, the inhalations must be associated with the internal use of mercury—inunctions are usually employed. In extensive ulceration of the epiglottis and of the larynx, pencillings with a solution of iodine and iodide of potash in glycerine are spoken of as being very efficacious; it is likewise of use in dysphagia caused by ulceration of the epiglottis, new growths and hypertrophies of the mucous membrane, and follicular swellings. Potash, internally, is to be used at the same time.

In perichondritis, if time be allowed, inunction over the larynx of the *ungt. cin.* and internally some preparation of potash—a treatment which not infrequently diminishes the swelling within a day or two. If stenosis of the larynx and urgent dyspnoea are present, tracheotomy is of course a necessity.

Nervous affections of the larynx, sometimes existing with a mild catarrhal inflammation, are best treated by inhalations of chlorate of potash and insufflations of muriate of morphia. The galvano-cautery has been used by Schnitzler in several instances to destroy the warty syphilitic outgrowths found in the larynx, and is recommended where pencilling with the above iodine solution fails. Finally, the various forms of stenosis of the larynx, pharynx, and trachea, due either to polypi or cicatrices, must be relieved by appropriate surgical measures.—*Archives of Dermatology*, April, 1879.

Castanea Vesca in Whooping-cough.

This paper (Betz's *Memorabilien*, xxiii. 12), by KOVATSCH, of Laibach, relates the treatment of several cases of whooping-cough with the extract of *castanea vesca*, a drug which was brought into notice recently by the late Dr. Fleischmann, of Vienna, whose conclusions the author gives as follows. The drug can be given with the greatest good effect: 1. When, within the first eight days the number of daily paroxysms does not increase, or does not exceed twenty. 2. In cases of uncomplicated whooping-cough, and where the spasmodic attacks are well marked. 3. When the catarrhal symptoms are moderate. 4. In anæmic flabby individuals who are free from the scrofulous diathesis. There is nothing to expect on the other hand from this drug: 1. When the attacks exceed twenty in the twenty-four hours in the first eight days after the administration of the drug. 2. In case of profuse catarrh of the bronchi, complications of capillary bronchitis, with broncho-pneumonia and extensive collapse of lung. 3. In cases of enlargement of the glands in the anterior mediastinum and of the bronchial glands when such enlargement can be detected by examination. The results obtained by the author are summed up as follows: 1. The extract is of no use given in the first stage of whooping-cough, when the characteristic paroxysms have not developed. It does not prevent the development of the second stage, nor hinder the bronchial inflammation, nor lessen the fever. 2. In the second stage of the disease, when the paroxysms are well marked, but there are no complications; when the fever is moderate, and there is only bronchial catarrh, not pneumonia, capillary bronchitis or tuberculosis, the extract often brings about a rapid diminution in the number of daily paroxysms, but it must be given for at least a fortnight for the effect to be obvious. 3. When, after a week or a fortnight's exhibition of the extract the attack sinks to about two or three in the day, but the night attacks remain constant, then it is well to continue the drug. 4. When there is no dangerous complication, besides a considerable degree of bronchial catarrh; or, in the third stage, when there is always more or less of this affection, it is well to give the extract with some expectorant, such as ipecacuanha or senega.—*London Med. Record*, April 15, 1879.

Carbolic Acid in Whooping-cough.

The use of carbolic acid inhalations is recommended strongly by Dr. SEEMAN (*St. Petersburg Medicin. Wochenschr.*, Jan. 6, 1879); and in order that the inhalation may have the best effect, he advises that it should be administered during sleep, as it is difficult to insure that a child should inhale sufficiently long or enough of the medicament while awake. Woollen material, saturated with a 5 per cent. solution of the acid, should be hung round the head of the bed. In this paper the spasm of the glottis is attributed to an excitation of the centripetal fibres of the vagus, which is caused by the pressure of the distended vein in the jugular foramen, with giving way of the intra-jugular ligament, as a sequela of rickets. On the ground of this hypothesis, Oppenheimer proposes the name

Asthma Rhachiticum. The occasional occurrence of even fatal convulsions in spasm of the glottis, the author ascribes to excitation of the medulla oblongata by the overloading of the blood with carbonic acid during the stage of apnœa.—*London Med. Record*, April 15, 1879.

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Treatment of Whooping-cough by Atropia.

MR. ARTHUR WIGLESWORTH, of Liverpool, began over four years ago to treat all cases of whooping-cough solely with the sulphate of atropia, from infants two months old to the adult. It required some little time to find out the average dose to begin with; but he now begins with 1-120th of a grain (or one minim in a drachm of water), in children from one to four years of age, either diminishing or increasing the dose as occasion dictates; and, except in very severe cases, only order it to be given once a day; but when the nightly paroxysms are very severe, he orders half the dose to be repeated about an hour before bedtime.

The results that follow its administration may be summed up thus: 1st. There is a steady diminution in the number of paroxysms. 2d. There is a diminution in the duration of the paroxysms. 3d. There is a change in the character of the "whoop," as if the vocal cords were not so closely approximated. Further, if the atropine is withheld the beneficial effects derived from it subside.—*Lancet*, April 12, 1879.

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Compressed Air-Baths in Whooping-cough.

MOUTARD-MARTIN says (*Union Méd.*, March 11, 1879) that compressed air-baths are very efficient in every stage of whooping-cough. He has treated three patients, aged respectively seven, twelve, and fourteen, with compressed air in the incipient stages of the affection, and in every case it assumed a mild form, and did not last long.—*London Med. Record*, April 15, 1879.

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The Experimental Pathology of Pleural Effusion.

The influence of the presence in the pleura of air or liquid upon respiration has been studied in an interesting series of experiments by Professors WEIL and THOMA, which they relate in the current number of Virchow's *Archiv*. The special object of the experiments was to study the mechanical influence of these conditions on the respiratory process, with reference especially to the conditions which obtain in similar morbid states in the human subject. The points attended to were, the effect on the frequency and depth of respiration, and the effect on the inspired air. For the production of the conditions of hydrothorax injections of cocoa-butter were employed, which has the advantage that it remains fluid at the temperature of the body, and sets after death. It was found that the quantity of air inspired per minute increased if the injection was of moderate volume, but was diminished if the volume of the injection was very large. The point at which diminution commences was found to vary in different animals, even when the relation of the weight of the injected fluid to the whole body-weight was taken as the standard. As a rule, however, injections which were of less than 1-150th of the body-weight caused an increase, but those of a greater proportion caused a diminution in the volume of air breathed per minute. With large injections the amount of diminution amounted to from 5 to 71 per cent. It corresponded in degree to the quantity of the injected fluid. The alterations in the frequency and depth of breathing were less constant than the changes in the volume of air breathed. Increase in the latter was observed in some cases to coincide with an increase in both frequency and depth; in others with an increase in the frequency

and unchanged or diminished depth of breathing; in others, again, with an increase in the depth of respiration and uniform or diminished frequency. Diminution in the volume of air breathed was due either to a diminution in frequency and depth of respiration, or to diminished frequency with increased depth, or diminished depth with increased frequency. Most frequently, then, the increase of the volume per minute with small injections, and the diminished volume with large injections, corresponded respectively with an increase in the number or a diminution in the depth of the respirations.

The absolute quantity of the carbonic acid exhaled was diminished by large injections in approximate correspondence to the diminution of air breathed per minute. In small and moderate injections, on the other hand, it presented no considerable diminution, and in some cases even a slight increase. The percentage of the carbonic acid in the expired air showed no deviation from the normal. These results corresponded with those which had been obtained by Guttmann in his experiments on the injection of mucilage into the pleural cavity of rabbits. Certain discrepancies may be explained by differences in the mode in which the observations were made.

The increase of the volume of air breathed in the case of slight injections furnishes new evidence of the capability of the organism to compensate for morbid states by increased exertion in the apparatus concerned. On the other hand, the lung must have undergone a certain amount of retraction, compensated for by increased action of the respiratory centre by excessive stimulation of the vagus. This increased action proved, however, insufficient to compensate for the interference produced by large effusions. By them not only is the lung greatly compressed, but the thorax is maintained in a condition of inspiration, only to be overcome in a slight degree by the most energetic action of the respiratory muscles. The diminished excretion of carbonic acid was evidently related to this interference. To ascertain whether there is actually a diminished formation of carbonic acid fresh experiments are necessary.

Another interesting series of similar experiments were made to ascertain the effect on the respiration of pneumothorax, both with the cavity of the pleura closed and with an opening communicating with the external air. Closed pneumothorax caused an increase of every condition observed in the above experiments. The volume of air breathed increased in almost all cases from 3 to 29 per cent., the average increase being 14 per cent. The frequency of respiration increased from 6 to 72 per cent., the average increase being 24 per cent. The depth of respiration also in most cases was increased from 9 to 24 per cent., the average being 10 per cent. Only when the respiratory movements were excessively frequent was their depth lessened. The excretion of carbonic acid, however, was increased in three cases from 17 to 23 per cent., and in one case it was diminished. In the latter case the percentage of the carbonic acid in the expired air was diminished, in the other case it was increased. When an opening to the external air was maintained, however, the results were very different. All the elements in respiration exhibited a diminution, often very considerable. It is not difficult to understand the mechanism of this diminution in the air breathed and carbonic acid expired, since the effect of the respiratory movements in the lungs is, as is well known, greatly lessened in this condition. All the experiments were made on rabbits, and great care was taken to eliminate as far as possible the uncertainties arising from the great variation presented by the respiratory process in these animals under normal conditions.—*Lancet*, April 12, 1879.

Pulmonary Thrombosis as a Cause of Sudden (or Rapid) Death in Certain Cachexiæ, Tuberculosis, Carcinosis, etc.

Dr. HUCHARD (*L'Union Médicale*, January 23 and 25), after calling attention to the well-known fact that in cachectic diseases, owing to the profound changes which the composition of the blood undergoes, together with progressive enfeeblement of the cardiac contractility, the tendency to sanguineous coagulations in the veins of the limbs, the sinuses of the dura mater, and elsewhere, is great, and fraught with much danger, from the consequent presence of wandering coagula in the veins, and their arrest in the right side of the heart, or even as emboli in the pulmonary artery, maintains that in many cases when sudden death is due to plugging of the pulmonary artery, the plug has been formed at the spot where it is found, and that we have to do with a thrombus, and not an embolus. It has been pointed out that in cases of marasmic embolism the plug is usually formed at spots where there is the greatest tendency to blood stasis, *i. e.*, at the points furthest removed from the action of the cardiac impulse or the thoracic aspirations; now the position of the pulmonary artery is little calculated to favour this tendency to clotting; but, on the other hand, the blood it contains is rich in carbonic acid and poor in oxygen, two conditions which favour thrombosis; moreover, in pulmonary tuberculosis the right side of the heart may become so feeble from muscular degeneration, and so much of the respiratory surface of the lung may be destroyed by the disease, as to afford conditions very favourable to pulmonary thrombosis.

M. Huchard, in support of his view, gives the details of a case of sudden death in advanced phthisis, where, at the autopsy, a clot was found occupying the left branch of the pulmonary artery and its bifurcations, and of such a character as left no doubt that it had been formed at the spot where it was found. M. Charcot had also observed a case of pulmonary tuberculosis, the subject of which was suddenly seized with extreme dyspnœa, steadily increasing until the death of the patient, which occurred at the end of three days. Clots were found after death in the pulmonary arteries, in the right ventricle, and in the veins of the right lower limb. Examination of the clot in the pulmonary artery showed that it had been formed where it was found. Other observers have borne testimony to the occurrence of the same condition as a cause of sudden death in phthisis.

M. Huchard mentions also a case of gastric carcinoma, where the patient died suddenly from a violent attack of dyspnœa, and where, at the autopsy, consistent homogeneous plugs were found in the branches of the left pulmonary artery, which appeared to have been formed at the spot where they were found.

M. Huchard thinks his observations throw a new light on the history of sudden death in phthisis. He admits that the most common cause of sudden death in advanced tuberculosis is the simultaneous existence of cerebral anæmia and cardiac paresis. "The brain does not transmit to the heart the necessary nervous influx. The heart no longer sends to the brain the blood necessary to nourish and animate it, a vicious, morbid circle, from which the patient cannot escape, and life is therefore arrested." In such case, death arises from syncope, but there are other cases in which symptoms of asphyxia are blended with those of syncope; in these we have to do either with pulmonary embolism or pulmonary thrombosis. In the latter case death may be less rapid, but it may also be equally sudden if the thrombus is produced in a lung already greatly affected, and the function of which is almost entirely destroyed.—*London Med. Record*, April 15, 1879.

Creosote in Phthisis.

Dr. BONNEFONTAINE (*Union Méd.*, March 11, 1879) has found that consumptive patients who are rather fanciful concerning their food and medicine will easily take creosote in the shape of Dartais' capsules. These are very small globules containing each about five centigrammes of creosote, and quite tasteless. The drug must be taken three times a day, before every meal, in doses of three globules each time, and followed by a cup of chocolate or milk, a glass of wine, or some soup.—*London Med. Record*, April 15, 1879.

Infusoria in Sputum.

Of six cases of gangrene of the lungs, in which Dr. Kannenberg (Virchow's *Archiv* for March) has examined the sputum, in five he found not only the forms of fungi which Leyden and Jaffe have shown to be common in sputum (bacteria, leptothrix pulmonalis, and some spirilla), but also infusoria of the family of monads. They were present in the sputum immediately after expectoration, and were in most cases abundant, commonly embedded in plugs of fungus, but readily recognizable by their movement. Two forms were distinguishable, monas lens and cercomonans. The former is a pale spherule, somewhat smaller than a red blood-corpuscle, with a long filament often wrapped around it. The latter is somewhat larger than a lymph-corpuscle, also provided with a filament, often divided dichotomously, and presenting in its hinder part a process, and commonly with a clear nucleus in its interior. At rest, both forms are very similar.

It at first appeared doubtful whether these infusoria were actually expectorated from the lung—whether they might not come from the buccal fluids, or even be developed in the receptacle after expectoration. But their origin in the lung was proved by three facts: (1) The infusoria were found only in putrid plugs, certainly from the lung, and in these they were aggregated in nests, so that sometimes twenty or thirty were found in a single field of the microscope. (2) In sputum just expectorated they were found to present the most active movement, and the longer the sputum was kept the more languid they became. Twenty-four hours after expectoration the monads could no longer be found. (3) They could never be found in the secretion of the mouth, and the repeated cleansing of the mouth by permanganate of potash had no influence on the appearance of the infusoria. In two fatal cases the lungs were carefully examined, in the endeavour to discover the infusoria, but without success. This seems explicable by the fact that in the sputum-pot they ceased to be visible in twenty-four hours.

This appears to be the first published demonstration of the occurrence of infusoria in sputum. They were seen by Leyden in his investigations, but regarded as of extraneous origin. This occurrence seems to be related especially to putrid processes, for they have not been found in cases of abscess of the lung in which micrococci are common. Their germs must be supposed to enter the lung by the inspired air, a favourable nidus for their development being presented by the gangrenous part. It is probable, therefore, that their presence may in some cases afford valuable diagnostic information.—*Lancet*, May 3, 1879.

Case of Aneurism of the Heart treated Hydrotherapeutically.

SIEFFERMANN reports (*Gaz. Méd. de Strasb.*, February 1, 1879) the patient, aged 25, who presented all the symptoms of a cardiac aneurism. The dulness at the base of the heart was normal, the right ventricle did not appear to be abnormally enlarged, but the dulness of the left ventricle was much extended in all directions, and formed towards its base a tumour which reached almost to the

last left floating rib. There was no arching. A continuous purring thrill could be heard over the dulness, being especially loud in the middle. The pulsations of the heart were feeble and irregular. The impulse of the arteries was hardly perceptible, and about 100 a minute. The heart sounds could only be heard at the base of the organ; they were not accompanied by any blowing noises. The patient would become breathless after the least exertion. He was for two months put under hydrotherapeutic treatment, beginning with shower-bath, under very little pressure, all over the body. The pressure was gradually increased, and the stream allowed to play directly on the cardiac region. The patient remained under this treatment for two months, and left the establishment feeling much better and stronger. The purring sound could still be heard at a distance of about four inches from the lowest left floating rib.—*London Med. Record*, April 15, 1879.

Aneurism of the Left Ventricle.

At a recent meeting of the Société des Sciences Médicales (*Lyon Méd.*, January 26, 1879), a very interesting specimen of an aneurism of the left ventricle was presented. The patient had always been healthy, but much addicted to drinking. In April, 1878, the first symptoms of the subsequent affection appeared, anorexia, migrating pains in the groins, and rapid loss of flesh. Subsequently he began to vomit his food, either at night or the next morning. On examination, a hard tumour, which occupied about four square inches, was found in the epigastric region. The patient looked cachectic, but no other disease or trouble could be discovered at the time. In November a very small amount of fluctuation could be felt in the lower portions of the abdomen. In December the tumour could no longer be felt, the patient vomited his food about an hour after taking it, and died on the next day. At the necropsy it was found that the whole of the stomach was filled with alimentary matter. The small curvature was entirely occupied by a hard, fibrous neoplasm, which surrounded the pylorus, constricting it to a considerable extent. This tumour was attached by adhesions to the posterior walls of the abdomen, the pancreas, and spleen; all the parts covered by it were hard. The most interesting object, however, was the heart, which, although of normal weight and size, showed on the outside a tumour of the size of a nut, which, on an incision being made, proved to be an aneurism of the left ventricle. Its walls were rugged, the whole of it was calcified, and blood-clots and fibrine were found between the partitions of the inner walls. An embolus originating from one of the above-mentioned clots must in all probability have been the cause of death. The diagnosis—alcoholic cirrhosis of the liver, had been made previous to the patient's decease.—*London Med. Record*, April 15, 1879.

Treatment of Diarrhœa by the Hot-Water Douche.

SCHORSTEIN advises, in the *Wiener Med. Presse*, No. 49, 1878, the application of a douche of hot water under strong pressure to the umbilical region, in cases of diarrhœa. The temperature is at first 50°, but may be raised to 72°. The duration of the application lasts from three to five minutes; after it the patient takes a hip-bath of 50° to 62°. This treatment is generally repeated not more than twice daily. Dysenteric diarrhœas combined with tenesmus, and dysentery itself, if not inveterate, are treated in the same way. The effect is very rapid, and lasts much longer than opium treatment does; the pain is also calmed very quickly. The author has also found this hot douche answer in cases of colic caused by biliary calculus, and in many kinds of neuralgia, sciatica excepted, where

it was desirable to remove renal calculi and gravel, or long accumulated fecal matter.—*London Med. Record*, April 15, 1879.

Fatty Change (and Failure) of the Muscular Wall of the Gut, as a direct and indirect Cause of Intestinal Obstruction and Death.

MR. FURNEAUX JORDAN, Professor of Surgery at Queen's College, Birmingham, makes the following suggestive remarks (*British Med. Journal*, April 26, 1879) on the etiology of intestinal obstruction. He says:—

For several years past, I have from time to time seen cases in which, with, perhaps, no premonitory symptoms, continuous vomiting and tympany, lasting one, two, or more days, have been followed by death. While these symptoms appeared in some cases to come on spontaneously, in others, and I think more frequently, they followed some abdominal or pelvic operation. The cases, as a rule, happened in fat persons, in persons with large abdomens, in persons with signs of degeneration in various organs and with a history of habits which naturally lead to visceral changes. Examination of the bodies disclosed great internal accumulations of fat, and occasionally indications of visceral degeneration, but, curiously, no obvious or recognized cause of intestinal obstruction. In all the cases, the intestinal canal was greatly loaded with fat, and presented a strikingly yellow appearance; in some cases, indeed, it seemed to be simply a tube of fat. In one case, the microscope conclusively showed that the unstripped muscular fibres of the bowel were converted into fat. In observing and reflecting on these cases, of some of which I will speak later, I have arrived at the following conclusions:—

1. The smooth muscular fibres of the bowel are subject to fatty degeneration, which may become more or less complete; and that, consequently, they may, and do in given cases, wholly cease to contract.

2. This fatty change of the essential element of the gut-wall, when it ends in complete cessation of contractility, causes death by intestinal obstruction. Fatty failure of the intestines being in some cases extensive in area and reaching high up towards the stomach, the ensuing obstruction is acute, the vomiting incessant, and death early. In other cases, there may be less complete, or more limited, or irregularly distributed fatty change; and there will follow a slower or more fitful stream of symptoms and a later death.

3. Fatty transformation in the gut is more likely to appear (though perhaps not exclusively) in fat, especially very fat persons; in those who, from habits or natural tendency, are liable to have fatty degeneration of other organs, especially of the heart. Death in heart cases is quick and direct; in intestinal cases, slower and more indirect, but nevertheless very certain.

4. As premonitory syncope or exhaustion may happen from time to time before death from heart-fattiness, so "attacks" of obstruction may run before final obstruction from intestinal fattiness.

5. Failure of the bowel is helped on by continued flatulent distension, however it arises; the altered muscular fibres being so injured by overstretching that they never regain their functional contractility. Herein may be traced a likeness to atony of the bladder, where, it is well known, long-continued distension is, in certain cases, followed by entire loss of contractility; and it is not unlikely that fatty conversion of the muscular wall of the bladder is the basis of certain obscure cases of retention and cystitis coming on after middle age. It is conceivable that healthy gut may become the subject of fatal atony from long-continued stretching; but some, however slight, fatty change would greatly favour such a result.

6. In a limited number of cases, death is due directly to failure of intestinal action, and may come without obvious exciting cause. The muscular fibre is now

no longer muscular. In a larger number of cases, death comes more indirectly from some immediate shock to the abdominal organs. In strangulated hernia, when fatty bowel is present, the blown-out tube never again contracts. The vomiting continues, or returns, and death follows, notwithstanding that reduction has been easy and complete, and that there is no inflammation, or gangrene, or other cause of death. All injuries and operations in persons with failing gut are liable to be followed by vomiting, which ceases only with death. Especially is this so in operations on the abdominal or pelvic organs. Herniotomy and lithotomy are now and then followed by fatal vomiting, and subsequent search brings nothing to light; no injury to the peritoneum, no hemorrhage, no inflammation, no other lesion; nothing but a hugely distended bowel.

The cases which led me to believe that, in certain instances, death begins in the gut from entire cessation of action in the intestinal muscular fibre, and that the cessation was due to fatty degeneration, I now briefly cite.

Several years ago, a lady so stout that she had long been confined to her room—the staircase of her house was also narrow and awkward—without any previous complaint, began to vomit. The vomiting, at first occasional, became incessant and fecal in character, and she sank in two or three days. I examined the body. The intestinal canal was from end to end enormously distended with gas; but there was nowhere any localized obstruction of any kind. The bowel was strikingly yellow in appearance; and the amount of fat, not only on the body, but within the abdomen, could only be described in words that would savour of caricature. After the most careful examination, no other appearances could be found to account for death.

Another case, which made a vivid impression on my mind, was that of an exceedingly stout man. He got out of doors a little in a specially made phaeton with a bottom so low that it just cleared the road, and was reached with one short step. Without injury or premonitory incident of any kind, symptoms of intestinal obstruction (sometimes urgent and sometimes with intervals of ease) set in, and in a few days he died. A very yellow distended bowel was seen; indeed, I remarked in this case, as I have in others, "The bowel seems a tube of fat." The distension was not uniform, but more in some coils than in others. There was, however, no band, or twist, or stricture, or cause of obstruction of any kind. I had not yet concluded that death might be caused by fatty failure of the gut. I was merely suspicious, and afraid that it might be so, or I should have called in the aid of the microscope.

In a case of strangulated hernia in a very stout man, the bowel was reduced easily and with marked gurgling, and for a few hours he seemed better; but vomiting returned, and he died. On examination, no inflammation, or gangrene, or apparently adequate cause for death, was found. The abdominal organs were greatly loaded with fat. The heart was somewhat softer than natural. The extreme yellowness of the bowel so struck me, and my reflections and fears had now taken so clear a shape, that I determined to have a microscopical examination of the muscular fibre of the bowel. This was carefully made for me by an experienced microscopist, Dr. Wood (one of our staff), and left no doubt of the marked fatty change in the suspected structure. Dr. Wood did not content himself with the appearance of the fatty intestine; he examined portions of healthy intestine, and found a striking contrast.

Not long ago, I had two cases of lithotomy, both of which ended fatally within twenty-four hours, after several hours of incessant vomiting. The cases were singularly alike, and a description of one will serve for both. A big fat "drinking" man of sixty had enlarged prostate and a large vesical calculus. There was no tangible evidence of renal or other visceral disease. There was no peculiarity

in the operative steps to account for the result. I could not to-day alter any single step in the operation for the better. He was free from hemorrhage or marked shock. His condition for a few hours was quite comfortable; then occasional vomiting set in, and tympany of the abdomen appeared. The vomiting became frequent and was associated with great exhaustion, and ended fatally. In a subsequent examination, a description of the appearances would answer for both bodies. The internal organs were loaded with fat; the heart was somewhat pale and soft; and the kidneys were not healthy. The intestinal canal was singularly and uniformly yellow, and everywhere enormously distended. There were no signs anywhere of inflammation, or peritoneal injury, or extravasation of blood, or infiltration of urine.

I believe the operation here destroyed the vitality, so far as contractility was concerned, of the bowel. Flatulent distension followed, and irretrievably spoiled the gut. This condition, affecting all or a large portion of the canal, and affecting it even to the vicinity of the stomach, was practically a condition of acute, high-up, and complete obstruction.

Here the question naturally arises, What are the customary explanations, now and heretofore, of the causes of death after continuous vomiting which follows the reduction of strangulated hernia, which follows also operations for uncomplicated herniæ, which follows lithotomy and other operations on the pelvis and abdomen. The very variety of the explanations testifies to their improbability. One says shock; another says shock with feeble heart; another says ether or chloroform vomiting; another says rapid septic poisoning; another says incipient peritonitis. I am far from saying that these, or some of them, are inadequate causes of death under certain circumstances; but they do not satisfactorily account for death in the cases I bring forward. In pure shock, with or without cardiac degeneration, vomiting is rare; in cases of, say crushed knee-joint, or amputation at the hip, or even in severe abdominal injury (in healthy persons), nerve-muscular action dwindles down to death without vomiting. That ether or chloroform vomiting should recur after some hours of comfort is at least hypothetical; hypothetical also is rapid septic poisoning without rigor, or rise of temperature, or any other likeness to the known septic state. Peritonitis without the slightest sign of peritonitis is too metaphysical a pathology to grasp. In fatty change and consequent failure of the gut, we have an explanation which is based on clinical and microscopic observation, which clears up all difficulties, and which is consistent with known pathological laws.

Hypertrophic Cirrhosis with Jaundice.

M. HANOT (*Progrès Médical*, No. 10) publishes a case of this disease, described by him in his thesis (1875). Patient, a young married woman, 22, had been ill and jaundiced for two years; she had not abused alcohol; she complained of pain in the right side, and frequent bleeding from the nose. The abdomen was much distended; the liver dulness passed from four fingers' breadths below the false ribs to six centimetres ($2\frac{1}{2}$ inches) below the clavicle. The spleen was enlarged and painful. The subcutaneous abdominal veins were slightly dilated. No ascites. The pulse was very small, 100, the skin hot, dry. Temp. 39.6°C . (105.2°F .). Heart and lungs normal. Urine contained bile-pigment and albumen. Ascites developed before death, together with general œdema of the lower extremities. At the autopsy, the thoracic organs presented no anomaly, except some serous effusion. The liver weighed 2700 grammes (about 9 lbs.), was large, of woody toughness, and gray; its upper surface was slightly granular; the lower surface more uniform. On section the granulations were better seen.

The microscopical examination made by M. Menu, showed extra- and intra-lobular cirrhosis, with abnormal development of biliary canaliculi.

Influence of Medicinal and Tonic Substances in Producing Glycosuria and Diabetes.

According to CYR's opinion (*Bull. de Thérap.*, December, 1878), arsenic, phosphorus, and mercury may cause persistent diabetes. Substances which are more diffusible, such as alcohol, ether, chloroform, even if used for a long time, do not seem often to produce this disease, but if it should come on, the author would attribute it to the effect of one of these substances on the nervous system. The same remarks are applicable to the abuse of certain drugs which act especially upon the nervous system, such as opium, strychnia, curare, and also bad beer, or when this disease supervenes in horses which have been fed with wet oats. Carbonic oxide may also cause glycosuria. In the latter part of the article the author speaks of telluric poison as a certain cause, not only of glycosuria but also of diabetes; this latter affection may be attributed directly to glycosuria, and indirectly to the disturbing effect of the telluric poisoning upon the chylopoietic apparatus.—*London Med. Record*, April 15, 1879.

Renal Hemorrhage in a Child.

This case was brought by M. COTTIN before the Anatomical Society in Paris. The child, aged 3½ years, died with eclampsia, the attacks of which had lasted five days, and were very violent and almost continuous. At the autopsy, there was proved to be a hemorrhage in the right kidney at its lower end, presenting the form of a clearly limited apoplectic focus. It was about the size of a large nut, and occupied both parts of the kidney, but especially the cortical. In the centre, the section of a considerable-sized vessel was seen whose lumen was completely blocked by a fibrinous plug. The presence of the vessel (the seat of the thrombosis), exactly in the centre of the apoplectic focus, clearly indicates the point of origin and the mechanism of the hemorrhage. The rest of the kidney, as also the corresponding organ, was perfectly normal.—*Gaz. des Hôpitaux*, p. 219, 1879.

Perinephritis and its Literature.

NIEDEN has written an inaugural dissertation (*Ueber Perinephritis hauptsächlich in Ätiologischer und Diagnostischer Beziehung*, Leipzig, 1878) founded upon six cases which have come more or less under his own observation or knowledge, and upon a laborious collation of various authors, Rosenstein, Ebstein, Rayer, Vogel, Trousseau, Lancereaux, Simon, Hallé, Lecygne, etc., from whose writings, and the various periodical records, a table of 166 cases have been compiled.

The article is a lengthy one, and we can only give the bare conclusions of the author, but it will, as a whole, well repay perusal. The disease consists of an inflammation of the fat capsule surrounding the kidney, and of the connective tissue which is behind the peritoneum, and extends towards the pelvis. For the most part this inflammation leads to the formation of large abscesses, more rarely to small circumscribed ones. The latter condition is more apt to occur when pyelitic or pyelonephritic abscesses make their way slowly outwards. The usual sequel of these cases, if incision be delayed, is that they make their way outwards into the lumbar region or other places, after having burrowed about in the deeper parts. In other less frequent cases the internal organs are perforated, particu-

larly the intestine, or thorax, or abdominal cavity, before the abscess makes its way externally. It is but seldom that resolution without suppuration occurs. In eight cases gangrene was noticed, and caused death in two cases. One hundred and two of the cases were males, forty-two females, twenty-two are undetermined. The middle period of life furnishes the largest contingent of cases, but the recorded instances in children have largely increased of late. Etiologically there are two chief groups, which must be distinguished as primary and secondary perinephritis, and these again may be much subdivided. All those cases are primary, which follow some external cause or some general bodily state; those which are secondary owe their origin to the extension of disease from neighbouring organs. Under the former heading are placed perinephritis from wounds and contusions, large effusions of blood, great muscular effort, sudden chill, fever, and blood poisoning of various kinds. As a cause of secondary perinephritis, renal disease ranks first in importance. Thus pyelitis and pyelonephritis, particularly that form dependent upon calculi, may start severe disturbances in the tissues about the kidneys, and, moreover, the inflammation need not of necessity start from the pelvis of the kidney, but may take its origin in any part of the kidney, ureter, or even from the bladder. This may be by secondary suppuration of the kidney, by direct perforation of the ureter or pelvis of the kidney, or even without any perforation, by direct extension. However produced, an extensive circumrenal abscess is the usual result; more seldom there is a circumscribed abscess, or adhesive inflammation only, which may later, by making its way externally, cause contraction of the suppurating area, and the formation of a fistula. By a similar extension of inflammation, chronic catarrh of the bladder, both primary and when resulting from urethral stricture, may lead to perinephritis. To these must be added suppurative nephritis not due to calculus and renal phthisis; new growths; rupturing of serous cysts on the surface of the kidney, and parasitic inflammations due to the presence of echinococci (five cases); strongylus gigax (two cases), etc. Perinephritis, consecutive to disease of neighbouring organs, though less frequent than the previous form, yet embraces a large number of cases. There are records of cases from peritonitis, "inflammation of the entrails," perforation of the colon in one or other of its divisions, from typhlitis and perityphlitis, from inflammation (phlegmon) of the duodenum, from gall-stones, from hepatic abscess, rupture of the liver, and rupture of the gall-bladder, with discharge of gall-stones. From the thoracic viscera come cases where vomicae in the lungs have opened through the diaphragm, and of pleurisy, which has set up perinephritis (six cases). Another large group comes by means of the continuity of and conduction by the retroperitoneal connective tissue, the kidney being (as in many of the other cases) quite unconnected with the disease. Such are cases originating in spinal caries and psoas abscess (Rosenstein records a case in which the "*ganz intacte Niere schwamm*"); in operation wounds or traumatic wounds of the pelvic viscera, male or female, and puerperal inflammation; the operation of lithotomy; for urethral stricture; extirpation of the rectum and castration receiving special mention. This exhausts all the known causes of perinephritis, but there yet remain many cases which come into none of the before-mentioned groups. There are many other cases where, with a history of a chill only, or general bodily illness, the question must be answered why this particular part has become inflamed. If to this no positive reply can be given, still the fact remains that many credible observers have met with cases in which the symptoms of perinephritis have rapidly developed after a severe chill. It is probable that in these cases there is a feebleness of resistance, perhaps in consequence of some bygone affection, on the part of the connective tissue, which may be called a local predisposition. To the anatomical disposition of the parts is

due the fact that the inflammation is progressive in most cases, and almost constantly terminates in suppuration, while the depth and inaccessibility of the inflammation preclude all energetic treatment. A very important factor in the rapid spread of the abscess in all directions is the extension of the perinephritic cellular tissue to the diaphragm, the spine, the hip, the buttock, and all the pelvic organs, and there is still another connecting link between the bladder and perirenal tissues in the ureter and renal pelvis.

Trousseau refers to the possibility of pain giving rise to inflammation and abscess, but the three cases cited by him were cases of obvious and sufficient disease of the pelvic organs, etc., lithotomy, castration, and long-continued disturbance at the neck of the bladder. With such evident pathological conditions, pain only indicates the first symptom of a commencing inflammation. In many other cases, no doubt, a careful clinical and anatomical investigation would make clear the mode of extension of the inflammation, particularly from the pelvic viscera, and so narrow the number of cases which are yet doubtful as to their etiology.

The diagnosis of perinephritis rests chiefly upon three symptoms: tumour, pain, and fever; these, with some other diagnostic points which may accompany them, form together a clinical picture which is easily recognizable.

The first symptom is usually fever, which attacks suddenly with rigors, followed by heat, sweating and then apyrexia, so as to simulate intermittent fever. The usual symptoms of fever are present, and an obstinate constipation, due in part to compression of the colon. The nervous symptoms have been observed by Trousseau to rouse the suspicion of typhus. In the latter part of its course the fever becomes more remittent in type, usually with a severe exacerbation at the onset of the suppuration, and in the process of pointing. Severe nervous symptoms, such as violent delirium or coma, are only present in very acute cases, especially those where gangrene supervenes. Should the fever continue after the pointing or opening of the abscess, either of which is usually associated with a sudden fall of temperature, the hectic type is assumed with the rapid establishment of a general cachexia.

There are other important symptoms. Pain which is usually situated under the false ribs, is dull in character, and changes its position from side to side. It is increased by movement or pressure, and passes for rheumatism or neuralgia. Local swelling is often long delayed, but sooner or later an indistinct resistance to deep palpation appears, which gradually assumes a more definite outline. There is dulness extending over a continually increasing area, so as to press upon the diaphragm, to appear in the thigh, or perhaps an abscess opens into the hip-joint. The tumour is immovable, rounded, and fluctuating. Then the skin becomes infiltrated, hot, and red. Emphysema of the skin has been twice noticed by Trousseau, due to communication of the abscess with the colon. Spencer Wells and Simons have laid stress upon the importance of ascertaining the position of the colon in retroperitoneal tumours. On the left side it lies in front of, on the right inside the tumour. English and American authors have also made much of the position of the corresponding lower extremity. The thigh is flexed at the hip, as in psoriasis and coxitis, and should persons so affected attempt to walk, they lean with their arm extended upon the thigh. This position was noticed in twenty-five of the 166 cases. Anæsthesia of the whole extremity or of special regions, and neuralgia, have been noticed. The nature of the pus differs in the case of primary and secondary perinephritis. In the former it is thick and odourless, mixed with dead particles of connective tissue. In the latter it is serous or ichorous, mixed with urine, or offensive from decomposing urine or contact with the neighbouring colon, even though no actual perforation of the

intestine has taken place. Calculi may occasionally come through the wound. Not seldom the kidney can be felt by the finger through the wound.

The urine offers nothing characteristic, as a rule, though in special cases there may be special symptoms, such as hæmaturia, pyuria, the passage of echinococci (Case 110), worms (Case 21), and of calcareous particles.

With regard to the abscess, it seldom opens into the peritoneum; less rare is perforation of the colon (ten cases). The stomach, duodenum, pleura, and lung have all been occasionally involved. The bladder, urethra, and vagina were perforated once each. Externally it may open below Poupart's ligament, in various situations, or about the buttock, or in the lumbar region, the most favourable situation for the patient being the last-named. A permanent urinary fistula remains sometimes.

For differential diagnosis very little need be said. The occasional occurrence of serous cysts, hydatid cysts, and carcinoma of the kidney must be remembered. In the first two named, œdema of the skin is never present; in the latter the tumour is hard, irregular, and associated with hæmaturia and rapid cachexia.

The distinction between perinephritis and psoriasis is often difficult. To determine that point, attention must be directed to whether the pain is more severe in the renal or iliac region; whether the movements of the thigh are much limited, and whether in sitting down the body is made to rest on the tuber ischii of the unaffected side to relax the so-called "lumbar fold."

Dr. Nieten advocates early incision, and in the majority of cases the prognosis would appear to be favourable.—*London Med. Record*, April 15, 1879.

The Cure of Leprosy.

The official report on the employment of gurjun oil in the treatment of leprosy, at the Leper Asylum, Mahaica, British Guiana, by Mr. John D. Hillis, visiting surgeon, is published. We are glad to learn that this treatment, which was carried out carefully according to the directions of the late lamented Dr. Dougall, has been found by Mr. Hillis to effect results confirmatory of those published by its originator. Of thirty-two patients submitted to this treatment during nine months, a very great improvement in all the symptoms occurred in sixteen of the cases; eight had their symptoms ameliorated; and one case so far recovered that he was enabled to return to his family and friends—in all, twenty-five cases out of the thirty-two much benefited. The report contains a concise, but complete, clinical history of the cases before and after treatment, and is completely illustrated by photographs. It forms a contribution of some value to the literature of leprosy.—*British Med Journal*, April 26, 1879.

Surgery.

Chancres of the Eye.

THIRY (*La Presse Médicale Belge*, 4 Août, 1878) believes that the ocular conjunctiva is rarely, if ever, the seat of chancre, and this he seeks to explain by the fact that the tears neutralize the virulent action of the virus. The author relates an interesting case. Patient, a man of 23, had on the margin of the upper lid an ulceration, involving the caruncle and the lachrymal canaliculi. The lid was swollen, and there was serous chemosis. A diagnosis of phagedenic chancre of upper lid was made. The genitals showed no lesion. The patient

admitted having been exposed, and remembered that four to five days thereafter he had noticed a painful pustule on the inner canthus of this eye. The ulcer was cauterized with acid nitrate of mercury, and in three weeks it was cicatrized. Later there was swelling of the cervical glands and development of syphilitic cachexia, and for more than a year he was under treatment.

Another case is given of a woman, 56 years old, who presented herself with a binocular iritis, with a papular eruption of the face. On the upper lid was a firm, resistant, and indolent swelling, and beneath it a small and incompletely cicatrized ulcer. The patient admitted that five weeks before there had appeared a small pimple on the upper lid—eight days later the tumour. Fifteen days later still came the affection of the sight. The patient's husband was examined, and found to have a chancre of the lip and others in the mouth. The writer goes on to say that a remarkable fact in favour of the unity of the virus of chancres was that the husband, who had chancres on the mouth and on the lip, showed no trace of syphilitic affection.—*Archives of Dermatology*, April, 1879.

Lysis of the Rectus Internus, with Conjugate Deviation of the Eye.

In 1859, Dr. Achille Foville was the first who made the co-ordinations of the eyeball a special object of study, and who postulated the idea, treated at the time as purely hypothetical, that the abductor muscles of one eye, and the adductors of the other, must receive their nervous impulse from the same source. He illustrated his theory by the fact that two horses harnessed together are guided to the right or the left by means of one rein.

Subsequently, Professor Gubler, Dr. Desnos, and Dr. Féréol devoted much care and study to the same subject. M. GRAUX, in his *Thèse de Paris*, 1878, has availed himself of their observations, and adding some which he had had the opportunity of making, he was enabled to form important conclusions on the subject from anatomical, clinical, and physiological points of view.

Clinically, all the oculists who had studied the paralysis of the motor muscles of the eye, did not go beyond acknowledging and describing, in the eye which was on the non-affected side, a secondary deviation which affected the rectus internus, and produced converging strabismus.

It has, however, now been proved by recent observations that there exists another form of paralysis of the external rectus, in the case where the rectus internus of the opposite eye, instead of moving in the opposite direction to its congeneric muscle, remains associated with it in its movements. Two different anatomical lesions correspond to these two different forms of paralysis of the external rectus. In the first form, which is also the one more commonly met with, the sixth nerve is found to be affected either after it has left the pons, or while it is still within it; in this case, however, the lesion does not affect the origin of the nerve, and only extends to the nerve filaments which run between the origin of the nerve and the spot where it emerges from the pons. A lesion of the origin of the sixth nerve corresponds to the second form of paralysis, which is more seldom met with beneath the floor of the fourth ventricle. If, therefore, in examining a patient with paralysis of the sixth nerve, we should find a conjugate deviation of the right eye, we may be sure that there exists in the pons a lesion (hemorrhage or tumour) which is restricted to the origin of the left sixth nerve. The precision with which this spot has been ascertained is most remarkable, as the lesion does not occupy more than the space of a few millimetres in the pons; and, up to the present time, the anatomical diagnosis has always been verified at the necropsy.

But another still more remarkable fact, which Féréol has been the first to ob-

serve, is that, in those cases, the conjugate deviation of the healthy eye only occurs in binocular vision at a distance, because here the healthy internal rectus works in conjunction with its fellow, the paralyzed external rectus; again, on the other hand, if both eyes are made to converge, looking at a point at a short distance, that is to say, if both internal recti work together, the muscle on the healthy side will have recovered its normal action.

We may, therefore, infer from what has been said, that: 1. The nucleus of the sixth nerve not only supplies the motor nerve to the external rectus of the same side, but also sends a few fibres to the internal rectus on the opposite side, a phenomenon which Dr. Foville has been the first to observe. 2. That the internal rectus, which is evidently supplied with nerve fibres from the blind nerve, either obeys the latter (convergent vision at a short distance), or the fibres which run to it from the sixth nerve on the opposite side (vision at a great distance), as has been observed by Féréol.—*London Med. Record*, April 15, 1879.

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Cataract Extraction, with a statement of two hundred and fifty cases.

At a late meeting of the New York Academy of Medicine (*Med. Record*, May 10, 1879), Dr. C. R. AGNEW read a valuable and interesting paper, and offered for the consideration of the Academy a tabular statement of two hundred and fifty consecutive cases of cataract extraction, with such comments as seemed to him to be the fruit of the experience which they afforded. One hundred and eighteen of the number had already been published, while one hundred and thirty-two had not heretofore been tabulated. He brought the cases altogether in order that a broader basis might be made for such animadversions and deductions as naturally followed from their consideration. Of course we all desired to know what was the best method for the removal of a hard cataract, and what was the prognosis in such operative interference. In considering the question of cataract extraction it was difficult to generalize, unless we did it upon a basis of a very large number of cases. Ever since von Graefe had given us the method of modified linear extraction, the danger of failure to give improved vision in cataract cases had steadily lessened whenever ophthalmic surgery was intelligently practised. He thought it might be safely said that the danger of total loss might be stated as being considerably less than ten per cent. In the group of 118 cases already published by him the percentage of failure to restore vision was $9\frac{1}{2}$ per cent. In the group of 132 cases the percentage of failure to restore vision was $8\frac{1}{3}$ per cent. Combining the results of the two groups there was a percentage of failure to restore vision of $8\frac{1}{4}$ per cent. Dr. Agnew thought that the more obvious lessons which those cases taught might not be without value as helping to show us what to do or what not to do in our immediate practice. The more experience he had, the more his confidence increased in the comparative value of that method for the removal of hard cataract which was known as *Graefe's modified linear method*. By that he meant the method which consisted essentially in the removal from the eye of the crystalline lens, without its capsule, by making an incision upward in the margin of the cornea, and removing by an iridectomy that opposing portion of the iris which laid in the way of the easy delivery of the lens. In common with most, if not all surgeons, he made a wound, the edge of which extended about a millimetre back from the margin of the clear cornea, while at least three-fifths of its entire extent was distinctly in the clear cornea, but bordering upon its opaque edge. The position of the wound differed decidedly from that which Graefe first selected, and for a most excellent reason that it kept away, throughout the greater portion of its extent, from the limbus of the cornea and the ciliary region, thus lessening the danger of disastrous

ciliary irritation and inflammation—the danger which Graefe soon discovered and shunned. The knife he used resembled more nearly that sold as Liebreich's than the one employed by Graefe. It was a very narrow, straight bistoury, which, by its narrowness and thinness, could be easily propelled through the corneal tissue, encountering the minimum of resistance, and being most easily directed in the manœuvre necessary to make a sufficiently large and clean corneal wound. To hold the eyelids open he used Graefe's silver-wire speculum. He usually gave the patient ether to profound anæsthesia, taking all precautions to lessen the danger of vomiting. To steady the eyeball he used the ordinary fixation forceps, applying them as closely as possible to the margin of the cornea exactly opposite the place where he intended to make the corneal wound.

Considerable art was required to make the cut just where it should be. He usually divided the cornea into four zones by drawing five imaginary lines. One passed through the centre of the pupillary space, with two above and two below. The upper and the lower lines just grazed the clear corneal edge, while the others were exactly intermediate. He commenced his incision usually about a millimetre from the clear edge of the cornea, upon the intermediate line. The instant the point of the knife entered the anterior chamber he directed it downward and forward until it reached the centre of the field of the pupil, going on in the plane of the iris, but avoiding its tissue. He then passed the knife onward, giving to its point a curved direction upward, and made the counter-puncture on the intermediate line at a point as nearly as possible opposite the wound of entrance or puncture. That manœuvre made the dimensions of the wound in the anterior chamber as large as the outer edge of the cut would seem to indicate, and the ends of it sharp and clean, and less likely to ensnare the cut edges of the iridectomy. As the knife, in making the counter-puncture, emerged beneath the conjunctiva of the limbus, it was well to give it a somewhat quick thrust in order that the aqueous humour might not follow into the subconjunctival space and burrow there before the conjunctiva was pierced. In completing the corneal wound he endeavoured to have three-fifths of its extent distinctly in clear cornea, approaching the opaque edge and yet its central portion, one-half a millimetre at least, from it. He thought that a wound made throughout in the opaque cornea or the limbus did not heal so well; moreover, he had seen ugly and even disastrous trouble set up in the ciliary region by carrying the entire wound in the limbus. He was very imperative on the necessity of having the wound large enough for the easy delivery of the lens. An insufficient wound was the worst possible defect in a cataract operation.

In the iridectomy the iris should be coaxed out of the anterior chamber by a little gentle pressure with the horn-spoon over the upper ciliary region. It was better that the iris should prolapse than that the iris-forceps should be introduced into the anterior chamber. If, however, the desired prolapse of the iris could not be produced in that manner, the forceps could be introduced. Usually the amount required was removed by three snips of the scissors. The aim should be to leave a clean-cut coloboma without jagged edges or any tags of iris in the corneal wound.

The next step in the operation was the laceration of the lens capsule. It had been proposed to deliver the lens capsule and all without laceration, but he had not been so favourably impressed by what he had read and seen as to be induced to try that method. The best that could be said for it was that it did not necessarily always cost a loss of the eye.

With reference to division of the capsule, he thought the practice had commonly been to use the cystotome freely and to break up as much of the anterior capsule as possible without coming in contact with the uveal surface of the iris too

freely. He had never been able to convince himself that any considerable portion of the anterior capsule could be invariably cut out by any method of concurring incisions. He had, therefore, always contented himself with such a free division of that portion of the anterior capsule as extended from below the axis of the lens upward to its periphery, and sideways to the edges of the cut iris. Lately, acting upon a suggestion made by Dr. Knapp, he had confined his work with the cystotome more to the mere peripheral portion of the capsule, opening the sac of the lens along its upper and anterior edge, taking care not to lacerate the suspensory ligament or to open the vitreous chamber. That operative procedure was first suggested and done by Dr. Gruening in Morgagnian cataract, and Dr. Agnew thought the method was a most substantial addition to the extraction manoeuvres. It might be true that a secondary operation might be very frequently necessary to break a hole in the capsule which would become more or less opaque, but such a procedure was extremely common after the older method of free division of the capsule at the time of the operation.

For a year or two he had resorted quite frequently to a preliminary iridectomy, hoping by so doing to lessen the number of total losses after extraction. His experience had led him to believe that it was of value in exceptional cases only, or when we had more than usual reason to dread accidents at the time of the extraction operation, or certain bad after-complications.

At present he was in favour of the preliminary iridectomy: 1. In cases of known or gravely suspected fluidity of vitreous humour; 2. In cases of extreme marasmus, when the nutrition of the eye was very doubtful; 3. In cases in which an anæsthetic could not be used, and in which the patient had no self-control, or when from extreme deafness the surgeon was unable to command quick obedience on the part of the patient; 4. In cases of extensive pterygium or chronic conjunctivitis; 5. In some cases of synechia, anterior or posterior; 6. In cases of partial staphyloma.

Dr. Agnew then referred to certain minute details which he regarded as of the utmost importance, such as thorough removal of lens crumbs by manipulating the cornea with partially closed eyelids; moistening the surface of the cornea if there was the slightest suspicion that its epithelial covering was growing dry; aiding the delivery of the lens by a little pressure on the eyeball, over the upper scleral lip of the corneal wound; bringing forward the lens by well-directed pressure with the horn-spoon, so that the nucleus and critical portion could be delivered together. Those difficulties would be at their minimum if the corneal wound was large enough.

At one time Dr. Agnew thought it best to dilate the pupil with atropia before extracting the lens, but had discontinued the plan. He had not seen any reason for instilling eserine before the extraction, but on the contrary some cogent ones against its use at that stage—among others, that it now and then induced much irritation of the eye and active hyperæmia.

Dr. Agnew then gave a somewhat detailed account of the after-treatment of the patient, such as related to covering the eye, and the general hygienic and medicinal management of the case. So long as the tarsal edges of the eyelids remained natural in appearance, not being in the slightest degree reddened or swollen, the scleral conjunctiva only moderately injected, the cornea clear, and the anterior chamber neither muddy on the one hand, nor too clear and too deep on the other, and the iris changed but little from the color of that in the fellow-eye, and the reflex from the pupillary field was either clear and black or only a little milk-and-water looking from the presence of a few thin crumbs of cortical lens matter, we might remain at ease. Usually, little after-treatment was required of a surgical kind, however, and we simply had to meet inflammation in

some one of its acute or subacute forms. He felt, however, that after having done a good clean extraction through a sufficiently large corneal wound, we might, as a rule, content ourselves by vigilant inactivity.

His method of applying cold to the eyes was by means of pieces of muslin that had laid for some time upon a block of ice.

When atropia caused irritation, duboisia should be substituted for it.

Statement of Results in the Group of 132 Cases.—By Graefe's method there were 80 successes, 11 partial successes, and 8 failures.

By Graefe's method, with preliminary iridectomy, there were 22 successes, 2 partial successes.

By Liebreich's method there were 6 successes and 2 failures.

By Le Brun's method there was 1 failure.

The successes were $81\frac{2}{3}$ per cent. ; partial successes, $9\frac{2}{3}$ per cent. ; and the failures, $8\frac{1}{3}$ per cent.

Statement of Results of the whole 250 Cases.—By Graefe's method there were 146 successes, 20 partial successes, 15 failures, and 3 unknown.

By Liebreich's method there were 21 successes, 2 partial successes, and 6 failures.

By Graefe's method, with preliminary iridectomy, there were 22 successes and 2 partial successes.

By Le Brun's method there were 4 successes, 2 partial successes, and 1 failure.

By the flap operation there were 6 successes.

The successes were $79\frac{1}{2}$ per cent. ; partial successes, $10\frac{1}{2}$ per cent. ; failures, $8\frac{1}{2}$ per cent. ; and unknown, $1\frac{1}{2}$ per cent.

Further analysis was read, after which Dr. Agnew gave a detailed report of two cases of unusual interest, and which illustrated the value of certain steps in the operation. Special reference was made to beneficial results following the administration of large doses of calomel [fifteen to twenty grains], when there was reason to believe that the vicinage of the bloodvessels was occupied by lymph-cells.

The Semeiological Value of Mydriasis and Myosis.

At his ophthalmological clinic in Paris (*Gazette des Hôpitaux*, No. 18, 1879), M. DE WECKER made the following observations:—

The functional changes of the iris, dilatation or contraction, may be of great consequence in the diagnosis of the diseases in which they are met with ; and the exact analysis of their details is of importance in relation to the recognition of the causes that have produced them.

Mydriasis is a concomitant symptom of paralysis of the third pair of cranial nerves (the common motor ocular nerve). In these cases, however, it is not complete, for a still greater dilatation may be produced if atropia be dropped into the eye. Mydriasis, therefore, is not solely under the influence of the third pair, complete dilatation of the pupil being the result of paralysis of the common motor ocular, and of stimulation of the fibres of the great sympathetic, which is the dilator of the pupil. Mydriasis may therefore be of a paralytic or of a spasmodic origin. Mydriasis which results from *paralysis* is symptomatic of a *cerebral* lesion ; while *spasmodic* mydriasis appears in affections in which *spinal* irritation plays the principal part. Besides these two quite distinct classes, it often happens that an irritation primarily cerebral may exert its maximum influence on the sympathetic system, while at the commencement of a meningitis there may be apoplectic attacks. Traumatism, or a blow on the head, may produce both excitation and paralysis ; or, in other words, the same and sole cause may induce at the same time paralysis of the common motor ocular, and excitation of

the sympathetic. This variety has been produced a great number of times experimentally on animals. In children mydriasis is very often due to spinal excitation; and it is thus a frequent result of the irritation produced by intestinal worms, the inveterate practice of onanism, etc. For the same reason, it appears in the initial stage of hysteria and epileptiform attacks.

The treatment of mydriasis must evidently vary according to whether it is paralytic or spasmodic. All mydriases of *paralytic* origin are generally accompanied by a paralytic lesion of the ciliary muscle, while *spasmodic* mydriases ordinarily leave the muscle of accommodation intact. It will, therefore, most frequently suffice to investigate the *power of accommodation* in order to determine whether the probable cause of the mydriasis be paralytic or spasmodic. If a patient, the subject of mydriasis, presents no disturbance of accommodation, we may declare that the cause of the mydriasis is spinal; while, if the integrity of this be not preserved, the cause is cerebral. In this latter case the disturbances of accommodation are easily recognized. Thus, the subject of hypermetropia, not being able to accommodate the eye regularly, is unable to see distinctly, whether near or at a distance; in emmetropia there is no longer clear perception of near objects; and in myopia the faculty of reading is reduced to the vicinity of the *punctum remotum*. One or other of these conditions, according to the case, will, then, indicate a cerebral lesion as the cause of the mydriasis. Of course, all the subjects of mydriasis, whether paralytic or spasmodic, complain of the dazzling produced by light, dependent solely on the dilatation of the pupil; but this occurrence will not be confounded with disturbance in accommodation, properly so called. Mydriasis of *spinal* origin is a symptom of great value in prognosis, and often so in the diagnosis of these affections. Thus, it is an anticipatory symptom of locomotor ataxy; and in general paralysis it is also of great value. Still, it must not be forgotten that in these affections it is only transitory. We should abandon the modes of treatment formerly employed, the sole admissible indication seeming to be the dropping into the eye a solution of eserine or pilocarpin made into a collyrium with five centigrammes of distilled water. After using the collyrium we must observe how long the effect continues, as it is by the duration of its action in inducing contraction of the pupil that we should be guided—the interval of each instillation being rendered more and more long according to this duration. If, however, no change is observed, it is useless to tease the patient with an application which is scarcely palliative. Advantage may be derived also from the continuous electric current.

Myosis presents itself in two forms entirely analogous to those of mydriasis—a spasmodic form, determining the contraction of the sphincter by the excitation of the third pair; and a paralytic form, dependent on the sympathetic. The same effects on the accommodatory apparatus are also observed, the paralysis of the fibres of the sympathetic not influencing the muscle of accommodation, while the spasmodic irritation of the common ocular motor nerve gives rise to disturbances of accommodation. Spasmodic myosis is symptomatic of cerebral irritation, and the paralytic form depends on spinal affections. Paralytic myosis is especially of great value. A patient who as yet has presented no manifest sign of locomotor ataxy is the subject of very marked myosis. If this be due to ataxy, a remarkable fact is observable. He is still able to contract the pupil a little more than it is already. The iris, however, does not contract when the eye is submitted to an oblique light; but such contraction takes place when the patient, while looking at distant objects, is desired to regard near ones—that is, when we have caused him to put his accommodatory power into activity. Paralytic myosis may also arise from compression of the sympathetic by a gland, a goitre, or a tumor, and in this case it may be unilateral, ceasing when the compression dis-

appears. It is obviously of importance to be able to make an exact diagnosis of the form. Unfortunately, with regard to treatment, there is not much to be hoped for, atropia having a very temporary action. The examination of the patient is especially useful in this sense, that it enables us to foresee an affection which is not as yet recognizable by the other clinical signs that are ordinarily pathognomonic, so that by the adoption of appropriate treatment its evolution may be somewhat retarded.—*Med. Times and Gazette*, May 3, 1879.

Painless Method of Excising the Whole Tongue.

Mr. RICHARD BARWELL, Surgeon to, and Lecturer on Surgery at, Charing Cross Hospital, London, makes (*Lancet*, April 19, 1879) the following remarks on a case of a man on whom he performed excision of the whole tongue nine days ago.

The disease was a large epithelioma situated as far back in the organ as the anterior pillar of the fauces, occupying chiefly the left side; that is to say, the tumour itself and the ulceration were confined to that side, yet the condition called ichthyosis extended across and some distance on the right of the raphe. Now my late colleague, Mr. Fairlie Clarke, pointed out some years ago (*Med.-Chir. Trans.*, vol. lvii., p. 155) that this morbid state is the immediate precursor, or, indeed, the first stage of epithelioma. To take away a part of the tongue and to leave behind an ichthyotic portion would be a grave mistake. It was necessary, therefore, in this case to remove the whole breadth of the organ from a point very near the epiglottis. I desire to fix your attention upon the method I adopted, upon its ease both to surgeon and patient, and upon the absence of bleeding or external mutilation; especially as you will find in works on surgery, much used by students and practitioners, certain methods of operation described and figured of which I entirely disapprove. For instance, Regnoli's operation consists in cutting away the whole floor of the mouth by incisions along the middle line and round the body of the lower jaw, then dragging the tongue through the opening down upon the front of the neck, and severing it from its base. Another method is to slit soft parts and jaw from the mouth to the hyoid bone, and by dragging the parts asunder to lay bare the root of the tongue. These operations cause much hemorrhage, are very dangerous, and produce horrible mutilation. I have no hesitation in saying that they should only be mentioned as I mention them now—namely, as relics of a past and, in this particular region, of a barbarous stage of surgery. Even the division of muscles, etc., passing between the jaw, hyoid bone, and the tongue, as suggested by Sir James Paget, so as to enable the surgeon to drag the last-named part out of the mouth, is quite unnecessary, because, as you have seen, the tongue can be removed *en situ* with the greatest ease as far back, if necessary, as the epiglottis; nay, if it were desirable, that valve could, as far as the mere mechanism of the operation is concerned, be removed with the tongue from the hyoid bone.

The method itself is very simple. The instruments required are a small scalpel, one or two Liston's needles, and an *écraseur*, or better, two *écraseurs*. When the patient is well under the influence of the anæsthetic, place a gag between the jaws, draw the tongue a little forward, and pass through the raphe a string, with which the organ is to be simply controlled, not dragged out of the mouth, which must be avoided. An incision, about a quarter or a third of an inch long, is now made from the hyoid bone forward, and strictly in the middle line. Thus far you will see my operation resembles Nunneley's, except that my incision is further back and shorter; but from this point the methods differ, for that surgeon passed by means of a seton-needle the loop of an *écraseur* chain into

the floor of the mouth through the frenum of the tongue, and then dragged the part to be removed forward through the loop; and, although he could remove considerable parts by these means, he could hardly get at the whole organ, and I think his opening into the mouth too short and direct, nor did he eliminate pain.

By my method, when the raphe of the mylo-hyoid has been divided, the knife is laid aside, the genio-hyoid and genio-hyoglossus muscles are separated from their fellows by the handle of the scalpel or by the finger if the surgeon have a small finger-tip, and the root of the tongue is readily reached; but the mouth is not to be opened here. An armed Liston's needle is now placed in the wound, and the forefinger of the other hand between the diseased side of the tongue and the jaw, as far back as it will go, viz., a little beyond the last molar tooth—and to this point the needle is guided, taking care to keep it rather nearer to the bone than to the side of the tongue; here it pierces the mucous membrane, enters the mouth, and the thread, being released, is withdrawn, a loop of cord being left behind. The same thing is then done for the other side, except that here a loop in the mouth is unnecessary. The *écraseur* is now taken in hand; it must have one end of the wire detached and bent into a sort of hook at as sharp an angle as the material will bear. Tie an end of the last placed thread in the bend of this hook; then by traction on the other end, that in the mouth, draw the wire along the track of the needle. When the metal appears in the mouth just beyond the last molar tooth, pull the wire gently through till the nozzle of the *écraseur* is close to the supra-hyoid wound; then detach the thread and pass the wire hook into the loop of twine that enters the mouth on the diseased side of the tongue, and by gentle traction draw the metal from thus far back in the mouth, out at the hyoid wound, and attach it to the body of the instrument. Before screwing the wire tight, pass a finger along the dorsum of the tongue and ascertain its exact position. I am not afraid of its lying too far forward—it might easily, without care, sit too far back, also it might slip away from the desired place as the screw is used; therefore, having fixed the exact line along which the tongue is to be severed, I place my finger where that line intersects the raphe on the dorsum of the tongue; to it I pass the Liston's needle, letting its point project a line or two, and taking care that the wire lies behind it; by this means the *écraseur* can be guided exactly along the required plane. When the base of the tongue has been cut through, and the wire has come out at the wound, the loop of the same or of another *écraseur* is passed over the tip of the tongue into the line of incision, and the tissues, small in quantity but very vascular, which attach the tongue to the floor of the mouth, slowly cut through, when the whole organ is severed, and is removed from between the lips.

Now to recall your attention to the man himself. He lost during the operation not more than ten drops of blood, and none since. He has in front of the hyoid bone a very small scar of an already healed wound,¹ and no other external mutilation. He has lost the whole of the tongue, well clear of the disease, as you see by the specimen, and within a line or two of the epiglottis; yet he has no fever, his temperature is normal, and he takes tepid liquids without difficulty. Whenever I have asked him if he is in or has suffered any pain, he invariably answered in the negative. It seems strange, at first sight, that an organ so sensitive as the tongue can be removed without the production of a moment's pain, especially as a good deal of suffering follows the usual modes of excision; yet, when we have considered the matter together, you will see that this is a neces-

¹ The very oblique and valvular communication between this wound and the cavity of the mouth renders the passage of fluids along it almost impossible; thus obviating the production of a fistula.

sary result of my method of operation. By avoiding any dragging of the tongue forward, but, on the contrary, getting the *écraseur* wire around it *in situ*, and by keeping that wire, just previous to its entrance into the mouth, rather near though not close to the ramus of the jaw, I divide the sensory nerve of the tongue, the lingual-gustatory, close to the bone; it then retracts into its groove, and the whole wound must of necessity be insensible to pain. Therefore the man could immediately after the operation take abundance of liquid nourishment, avoided fever, and the part has rapidly healed. I would suggest, though I have not yet had an opportunity of reducing the proposal to practice, that when a less portion of the tongue has to be removed the lingual-gustatory nerve of one or both sides, according to the extent of amputation, might with advantage be divided on the ramus of the jaw.

The Manometer in Thoracentesis.

One of the greatest difficulties which are met with in the practice of thoracentesis consists in knowing the proper moment at which to stop in drawing off the fluid. In order to appreciate the modifications which the intrathoracic tension may undergo in effusions in the pleura, M. POTAIN has adapted a manometer to the aspiratory apparatus which is employed in the operation. The manometer is in constant communication with the effusion, so that the progressive diminution of intrapleural tension is easily perceived, and one can stop in time to avoid the serious accidents which result from a too sudden removal of pressure, such as congestion of the lungs, cough, pain, albuminous expectoration, etc. The pressure, which is measured, is the resultant of the various concordant or opposing actions which, in the normal state, produces thoracic aspiration. Further account must be taken of the state of the pleura and lung, such as thickening of the serous membrane, carnification of the pulmonary tissue, etc. Other elements which intervene, and cause the intrapleural pressure to vary, are a normal or less rigid state of the thoracic walls, the resistance of the mediastinum, the abundance of the exudation, its height, its weight, etc. The indications of the manometer should be consulted from the commencement of the operation, during and after the outflow. The initial tension is almost always positive, but exceptionally it may drop to zero or even below. Sometimes it rises without the energy of the respiratory movements being for the moment exaggerated. It is impossible to establish a proportional relation between the tension of the fluid and its quantity. In general, high pressures are observed with abundant effusions, especially when they are inflammatory and recent in young and vigorous subjects; while low, initial pressures are recognized in the opposite conditions (old effusion, cachectic subject, contracted lung, etc.). In a word, in chronic effusions, the manometer may serve as a guide in appreciating the moment at which it is desirable to interrupt the flow of liquid; so long as the disturbance is slow and gradual, extraction of the fluid may in general be continued. It is desirable to suspend it when, after progressive lowering, a *brusque* and notable diminution of pressure is observed. In general, a moderate depression, coinciding with the evacuation of an abundant collection of fluid, is a favourable prognosis. The above subject forms the material of an interesting essay, by M. Homolle, in the *Revue Mensuelle de Médecine et de Chirurgie* for February.—*British Med. Journal*, April 19, 1879.

Fracture of the Ulna without Displacement or Mobility.

A man, aged sixty-six, came to the Charité ten days after he had fallen on his hand, complaining that he could not use his right arm. He paid little attention to it at first, being able to use his arm for the ordinary purposes of life, but finding

himself unable to pursue his employment. A swelling was found just above the wrist, and crepitation could be felt below the middle of the ulna. On making pressure at the two extremities of the bone, so as to cause a separation of the fragments from each other, Prof. GOSSELIN was unable to produce any abnormal mobility of the ulna, and it was only on pressing at the seat of swelling that he felt the bone yield to his finger. This was a case, then, of fracture of the ulna without displacement or mobility; and it is in consequence of the absence of this mobility that these fractures are so often overlooked during the first days after their occurrence, they usually not being discovered until the eighth or tenth day. This, however, is of little consequence, as an apparatus is not required so soon after the accident. The appearance of swelling at the inner part of the forearm, after a fall on the hand, should always lead us to suspect the nature of the accident. In the prognosis we should bear in mind that the fragments of the bone may be carried towards the radius, and a fusion of the two bones of the arm has to be guarded against. Indeed, the treatment required has only this possibility in view, the chief indication being to press the muscles towards the interosseous space. This is done by means of graduated compresses placed on the anterior and posterior surfaces of the arm, applying over them two splints and a roller. Or, better still, three bands of diachylon may be applied, these not being liable to become loosened, and leaving the integuments exposed in their intervals.—*Med. Times and Gaz.*, April 26, 1879, from *Rév. Méd.*, March 29.

Fatty Embola in Fractures.

At the Société de Biologie (*Le Progrès Médical*, March 1, 1879), M. DÉJÉRINE stated that in November last he published two cases of fatty embola following osseous alterations. Since that time he had observed ten others; in examining the lungs of each of these cases, he had always observed very plainly the existence of fatty embola in a degree proportional to the intensity and extent of the osseous disturbance. He had also found, as had been seen by other authors, that death supervened shortly after the traumatism. In two cases only, were the fatty embola found in the liver and the kidneys. No opportunity had offered for observing a case where it was general, as had been many times seen in Germany. M. Déjérine had also made experimental researches on this subject, and these were carried out in the laboratory of M. Vulpian on a large number of dogs. By varying the procedure, the fatty embola had been produced in the animals in different degrees, varying from a very slight embolon, up to a very abundant amount, such as was seen in man after a large traumatism. The operations undertaken by M. Déjérine consisted at first, in the production of simple fractures without communication with the external air. In these instances the embola in the lungs were very slight, and sometimes caused no change. When, on the other hand, the osseous medulla was implicated, either wholly or in part, by the introduction of foreign bodies into its canal, the fatty embola were very manifest, and it was possible to follow the fat in the blood from the veins of the limb to the vessels of the lung. If, instead of introducing into the medullary cavity an inert foreign body, such as a piece of iron, a substance was substituted which was capable of self-dilatation, as for instance the *laminaria digitata*, then the pulmonary fatty embola were obtained in an extremely considerable quantity, the lungs being literally injected with fat. These experiments confirm those of Bergmann and Halm. M. Déjérine remarked further that the embola produced by the introduction of pieces of *laminaria* into the medullary canal were much more pronounced than those obtained by other experimental methods. It appears, therefore, very probable that fatty embolon in man follows a rapidly developed osteomyelitis, for by

pressure from within outwards the fat penetrates the osseous capillaries, and so enters the venous circulation. In animals it is difficult to produce a true osteomyelitis, but in introducing a piece of laminaria into the whole length of the medullary canal, M. Déjérine found a persistent irritation of the medulla could be produced, and so an excentric compression of the medullary canal.

At the Société Anatomique (*Le Progrès Médical*, March 8, 1879), M. Duret stated that he had observed when with M. Verneuil, a case, which clearly showed the origin of the fatty embolon. The patient was a man with a fractured tibia, which, in consequence of movements and efforts made to rise, had been converted into a compound injury. Death rapidly took place. At the *post-mortem*, around the wound was found a reddish zone, formed by ruptured blood capillaries; beneath this was a yellowish band, constituted by numerous very fine granulations and small oil globules. These were also found in the veins of the limb, and were similar to those composing the osseous medulla. Besides these, the debris of fatty globules derived from the periarticular tissues were seen. M. Duret thinks it is therefore demonstrated, that the origin of the fatty embolon should be sought for in the veins coming from the injured site.—*Lond. Med. Record*, April 15, 1879.

Case of Neuralgic Osteomyelitis.

At a meeting of the Société de Chirurgie, on January 8, 1879, M. ANGER communicated the following curious fact. The patient, a man aged 54, had one day been out hunting, but did not over-fatigue himself. The next day he suddenly felt a violent pain in the right leg, which prevented him from walking. Nothing could be seen on the member, the tibia was not tender to pressure, or even when struck with some instrument, but the pain was intense whenever the patient's foot touched the ground. During the whole of the following month nothing could be seen on the diseased leg, no swelling, no redness, nothing but the same pain, which came on in paroxysms, without any regular intermittence. The pains were most violent on the calf of the leg, the ankle, and along the course of the anterior tibial nerve. A blister was applied to the inner surface of the tibia, and the gathering subsequently incised down to the periosteum, when it was found that the latter was detached from the bone on a circumference of about a threepenny piece. A few days later a purulent gathering was discovered on the upper third of the bone. Later on, the knee was swollen, which swelling was said to be osteomyelitis of the tibia, which had invaded the knee. The medullary canal of the tibia being filled with pus, a drain was introduced, large incisions made on both sides of the knee, and Lister's treatment adopted. The leg suppurated for about three months, when abscesses appeared on different parts of the body, and the patient died.

We have here a case of spontaneous osteomyelitis, which for a whole month was restricted to the tibia; no particular spot of the bone was ever found to be particularly painful, and during that month there was no swelling. The only peculiar phenomena were spasms and incessant muscular twitching; these may, perhaps, prove useful in future in making a diagnosis. It is evident that the case in question was one of neuralgic osteomyelitis.—*Lond. Med. Record*, April 15, 1879.

Midwifery and Gynæcology.

Ovarian Pain in Pregnant Women.

Dr. BUDIN, Chef de Clinique d'Accouchements, calls attention (*Progrès Médical*, No. 9) to a vivid pain which is sometimes produced during the latter months of pregnancy, and during labour, by a very moderate amount of pressure made on the abdomen by the ends of the index and medius fingers. The pain is sometimes so sharp that it causes exclamations or tears to start in the eye. It never occurs spontaneously, and its production is confined to the vicinity of a line drawn from the umbilicus to the anterior-superior spine of the ileum, sometimes a little above, and sometimes below this line, and at a distance varying from ten to fifteen centimetres from the umbilicus. At the seat of this pain so excited may be felt a movable body resembling the ovary in shape and size. Its presence is most frequently felt on the left side, the existence of a resisting surface—usually the back of the fœtus—being necessary in order for the body to be felt and the pain to be excited. Sometimes this can only be done during the contraction of the uterus. Dr. Budin thinks it possible that this "ovarian pain" has been confounded with certain neuralgia which several authors have termed rheumatism of the uterus, and with the pain sometimes caused by the pressure of the head on the uterine wall. It is sometimes very easy to distinguish also the round ligament, but pressure on this causes no pain. None of the women upon whom this tenderness has been produced were hysterical.—*Med. Times and Gaz.*, April 26, 1879.

Tubal Gestation.

At a late meeting of the Obstetrical Society of London, Dr. ROUTH contributed the notes of a case of Tubal Gestation. The patient, aged 22, was admitted into the Samaritan Hospital on January 31, 1878, complaining of pain in the lower abdomen, which had commenced a month previously. The catamenia were regular and profuse, the last period terminating abruptly a few days before admission. On examination an irregular rounded swelling was found occupying the left iliac and hypogastric regions, dull on percussion. Per vaginam a large mass, about the size of a cocoa-nut, filled the entire pelvis, the os uteri being pushed forwards and upwards, and reached with difficulty. The tumour appeared to contain fluid, and large pulsating vessels surrounded it. It was at first believed to be a hæmatocele, but, later, pregnancy was suspected from the discolouration of the genitalia. On February 18th it was tapped per rectum by the aspirator, and a pint of serous fluid was drawn off. This was followed by troublesome hemorrhage, to arrest which a solution of iron was injected, and subsequently withdrawn by the aspirator. No bad symptoms occurred till the 21st, when rigors set in, followed by feverish excitement, and the temperature ran up to 104° F. On examination, the tumour, which had been emptied, was found to be again distended with fluid. A membrane, which proved to be decidua, had passed from the vagina. After consultation surgical interference was negatived. Next day she died. At the autopsy a large thin clot concealed the viscera. On removing this the peritoneal cavity was found to contain a pint of fluid blood, and there were masses of clot in the cellular tissue of the iliac fossæ. A tumour, about the size of a cocoa-nut, lay behind the uterus, extending to the right into the iliac fossa, displacing the cæcum, and backwards against the fifth lumbar vertebra. It was soft, and its surface very vascular. It could be seen even *in situ* to be a dilatation of the right Fallopian tube. On examining the back of the tumour, a small aperture was discovered. On opening the tumour

it was found to contain one ounce of blood, a placenta, and a fœtus of about three months' development. The umbilical cord was about four inches long, and attached to the front of the cavity. The remainder of the Fallopian tube was coiled behind the uterus, in Douglas's space, under the left tube. No trace of the opening made through the rectum with the aspirator could be detected. The author then gave the details of a large number of published cases of extra-uterine fetation, from which he drew the following conclusions: That a discharge of blood resembling the catamenia frequently occurs, but that it varies in intensity, time, and quality; that the cases of tubal pregnancy, if diagnosed early, should not be left to nature, but should be treated by one of two proceedings—either simply tapped by the aspirator; or tapped, and subsequently a solution of morphia injected into the amnion.

Dr. PLAYFAIR inquired why the author had limited his discussion of possible methods of treatment to puncture and injection of morphia? Dr. Routh could not be ignorant of Dr. Thomas's well-known successful case in which a similar tumour was opened from the vagina by the galvano-caustic knife, a plan of treatment which seemed to him particularly valuable in such a case, inasmuch as the cautery not only obviated any risk of hemorrhage from division of large vessels, but the sac could be thus easily emptied of its contents, leaving the placenta *in situ*, and subsequently thoroughly drained, and washed out with antiseptics.

Mr. DORAN, who had made the post-mortem examination, exhibited the specimen which he had prepared from it, which showed beautifully the relation of parts. He remarked that the rent whence proceeded the hemorrhage was situate on the upper and posterior aspect of the cyst, and had gastrotomy been performed on the advent of the dangerous symptoms, the cyst could have been easily reached from above, and the laceration detected, the fœtus might have been removed, and the bleeding vessels secured by the cautery.

Dr. BANTOCK believed that gastrotomy offered the best hope of relief in cases of tubal pregnancy. If the fœtus happen to be in the outer part of the tube the sac might even be pediculated, and the pedicle could be ligatured or treated like that of an ovarian tumour. If near the uterine end the sac could be opened, the fœtus could be removed, and complete drainage could be effected, after securing the edges of the opening to the lips of the abdominal wound, with every probability of success.

Dr. BARNES considered the operation from below of greater value, being more accessible.

Dr. GODSON said that tapping per rectum incurred the risk of fetid gases passing from the bowel into the cyst, and he related the case of a patient upon whom he had operated for retention of menstrual fluid, owing to an imperforate hymen, in which this had occurred.

Dr. GALABIN remarked that with reference to the inference to be drawn from Dr. Routh's case as to the question of treatment, it was of interest to recall the statistics of the late Dr. Parry, who in his monograph had collected a far larger number of cases than any other author. From a review of these he drew the conclusion, that although the treatment of simple puncture might seem at first sight to be so promising and so innocuous, yet it was more dangerous than either leaving the case to nature or evacuating the cyst by a more free opening, a large majority of recorded cases having ended fatally.

Dr. ROGERS, from consideration of this and other cases, advocated gastrotomy and removing the fœtus without the placenta, putting a drainage-tube into the sac, and treating in the usual way; or if there were a pedicle and no strong adhesions, this might be ligatured, and the whole ovum removed.—*Lancet*, May 3, 1878.

Post-mortem Delivery per Vias Naturales.

Dr. A. THEVENOT (*Ann. de Gynec.*, Oct., Nov., and Dec., 1878), reviews with great care the comparative merits of post-mortem delivery by the Cæsarean operation and by extraction per vias naturales, which latter he calls the Italian method, since what little repute it has thus far obtained is chiefly due to the labours of Rizzoli. Five cases are quoted in which post-mortem delivery was accomplished by version. Two of the children were born alive, and continued to live; the third lived seven hours; the fourth only gave a few signs of life; the fifth probably died during the operation. The author considers that, if a large number of cases should furnish results proportionate to these, nothing could speak more forcibly in favour of the operation. It cannot be denied that post-mortem extraction may present difficulties leading to such loss of time as to involve serious danger to the child. This objection, however, is to a great extent counterbalanced by the promptness with which the proceeding may be undertaken at the very instant of death, or even during the agony, whereas the Cæsarean operation involves hesitation and delay. In regard to the chances of saving the child by the Cæsarean operation performed after the mother's death, the author first quotes Breslau's conclusions from experiments performed on animals, to the effect that (1) when the mother's death has been sudden and violent, there can be no doubt that the human fetus, as well as those of animals, survives the mother; (2) we may admit that this survival is longer in the human than in other species; (3) the Cæsarean operation is not likely to furnish a living child unless done within fifteen, or at most twenty, minutes after death; (4) if the mother has died of some blood disease, such as cholera, typhus, puerperal fever (during pregnancy or labour), scarlet fever, or smallpox, we cannot hope to save the child, because the conditions necessary to its existence have not been wiped out at a blow, but gradually destroyed. The same is true in cases of poisoning by substances, such as hydrocyanic acid and the like, which cause a very rapid decomposition of the blood; chloroform, which does not appear to enter in substance into the child's circulation, seems to constitute an exception to this rule. Discarding as fabulous the old reports upon the proportion of children saved by post-mortem Cæsarean section, we find that those reported during the present century show only two successful cases in a hundred attempts. If we choose the Cæsarean operation, we must first ask ourselves if the mother be really dead, if we are not about to open a living woman—a doubt which has stayed the hand of more than one physician. Moreover, the operation is such a grave one in itself, that no one would think of doing it without the consent of the family, and the family often hesitate, sometimes refuse, whence an almost unavoidable delay. Brief, too, as may be the necessary preparations, they demand a few instants, for it should be done as carefully as if the woman were living. Several very striking cases are given, in which the death of the mother was only apparent. Apparent death is less rare in women than in men, and least of all during gestation. In one of the cases (by d'Outrepoint), the woman recovered consciousness at the very moment that the Cæsarean operation was about to be begun; in two (Peu and Reinhardt), this occurred at the instant that the skin was cut; in two (Budin and Sédillot), consciousness was not recovered until the sutures were being inserted after the operation—both women recovered; in one (Trinchinetti), a per saltum hemorrhage from the arteries of the incised uterus converted apparent into real death; and in one (Baudelocque), delivery was accomplished per vias naturales after the surgeon had opened the uterus—but the woman did not recover. It can scarcely be denied that, in the present state of science, the physician can distinguish actual from apparent death, but the necessary investigation takes time—time which the

accoucheur cannot devote to it, for the child's safety demands instant decision. Upon one sign alone can he depend—the absence of the physiological heart-sounds; but Peu, Rigadeaux, d'Outrepoint, and Talinucci found no heart-beats, and Otterbourg explicitly states that auscultation of the chest gave only negative signs. Even admitting Bouchut's opinion that a heart which has been inaudible for twenty minutes cannot resume its functions—the child may die in one-tenth of this time. The harrowing circumstances of such a case, too, may naturally hinder the auscultator from recognizing a few very slow and very feeble heart-beats. It is well, therefore, to treat a woman who dies during advanced pregnancy as if she were only apparently dead. Especially does this hold good in cases of eclampsia. In eight out of seventeen cases of apparent death quoted, the cause of the condition is given, and in six of them it was convulsions. As a rule, a grave disease, an accident, or a profound emotion provokes labour. At the moment of death, especially if it have been slow, it is rare, after the fifth month, that the cervix is not for the most part effaced, and often dilatation has begun. The operation of artificial delivery is, therefore, seldom difficult. After sufficient dilatation of the os uteri with the fingers, aided, if necessary, by a dilating forceps or by slight incisions, the choice of the method of delivery lies between version and the forceps—a question to be settled on general principles.

In addition to post-mortem delivery, the article deals with the matter of inducing and hastening labour during the death agony. Fifteen cases are quoted in which this practice was followed. Thirteen children were born alive, six of whom survived, and seven lived only a very short time. The two that were still-born seemed to have been dead for several days. Of the living children, one was expelled spontaneously after the induction of labour by uterine douches; twelve others were extracted after artificial dilatation of the cervix—eight by version, and four with the forceps, of whom four and two respectively survived; of the six children who survived, four were born of phthisical women; one of a woman attacked with cerebral hemorrhage, and one of a woman affected with a chronic tumour and with hydramnios. Of the seven children who were born alive, but died within a week, four were born of women with cerebral apoplexy, one of a woman with Bright's disease, one of a mother attacked with a bronchial and intestinal disease, and one of a patient with sacro-coxalgia, who was dying of hectic fever. Inasmuch as the temperature of the fœtus is a higher degree than that of the mother, in diseases accompanied by a very high temperature, there is great risk that the child will perish rapidly, and our action should, therefore, be prompt in such cases. The same is true, according to Esterle, in cholera, phthisis, hemorrhage, the acute exanthemata, cerebral inflammation, eclampsia, cancer, syphilis, and lead-poisoning. The operation is to be recommended even in the interest of the mother, for not only does it seem not to shorten her life, but it almost always ameliorates her condition, often prolongs life, and in some instances has been followed by recovery. In all cases subjected to autopsy, the lesions of the genital canal have been found trifling—nothing more than slight lacerations of the cervix; hemorrhage has not been noted in any of the cases, and the uterus has always been found normally contracted. The time to interfere is when the fetal heart-sounds begin to flag, and delivery should be slow or rapid according to the state of mother and child. The remainder of the article deals chiefly with medico-legal questions.—*American Journal of Obstetrics*, April, 1879.

Death from the Injection of the Perchloride of Iron within the Uterus.

At a late meeting of the Obstetrical Society of London (*Med. Times and Gaz.*, April 5, 1879), Dr. CORY showed the uterus and appendages of a woman aged forty, who died in St. Thomas's Hospital. She had been admitted on account

of uterine hemorrhage, from which she had suffered for ten weeks since the expulsion of a vesicular mole. A fortnight after admission she had such a severe attack of bleeding that the resident accoucheur injected by means of a Higginson's syringe, a solution of perchloride of iron through a long tube which entered the uterus through a considerably dilated cervix. The woman became suddenly collapsed, and died almost before the tube could be removed. At the post-mortem examination a small quantity of darkish fluid was found in the recto-vaginal pouch; this contained a large amount of iron. A portion of vesicular mole still remained attached to the uterine wall. The fluid appeared to have entered the peritoneal cavity through the left Fallopian tube.

Dr. BRAXTON HICKS remarked that probably the astringent action of the injection had caused the os uteri and the cervix to contract on the pipe, preventing the exit of a portion of the solution; this being so, the patency of the cervical canal cannot be relied on alone.

Dr. BARNES called attention to a mode he had before brought under the notice of the Society, of applying perchloride of iron to cases like this by swabbing, or by using a tube perforated at the end containing sponges saturated with the styptic solution, which oozed out under the pressure of a piston. In Dr. Cory's case there was evidence of shock. That the mere contact of iron solution with the peritoneum was not necessarily fatal or dangerous, was certain. He had on more than one occasion swabbed large surfaces of the peritoneum to restrain hemorrhage from adhesions during ovariectomy, the patients recovering.

Dr. JOHN BRUNTON suggested the use of a canula for injecting, made after the manner of the double male catheter in common use, thereby permitting the solution to escape.

Dr. AVELING said that such an apparatus would be useless, as the clots would stop up the outlet.

Dr. EDIS was of the same opinion, and said that an instrument of this kind had been tried.

Removal of an Inverted Uterus by the Elastic Ligature.

M. CHAUVEL related the following case to the Société de Chirurgie (*L'Union Méd.*, May 1): A woman, aged 18, entered the hospital of Orleansville, Algeria, having been delivered of her first child seven or eight months previously. Great force was used in removing the placenta, and an inversion of the uterus was recognized soon after, but, after some ineffectual attempts at reduction had been made, the case was left to itself. Painful and abundant hemorrhage occurred at each menstrual period, and was reproduced by the slightest efforts. The patient was very anæmic, in a good deal of pain, and quite unable to undertake any work. A careful examination having been made, it was ascertained that a partial inversion was present, constituting a tumour the size of a medium orange, with a broad pedicle. All attempts at reduction, or support by means of a Gariel pessary, only inducing debilitating hemorrhages, an operation was, at the earnest request of the patient, determined on. On January 7, M. Chauvel, having assured himself of the continuity of the pedicle of the tumour with the circular projection formed by the lips of the cervix, passed the metallic noose of a *serre-nœud* around the pedicle, making sufficient constriction to arrest the oozing of blood from the surface of the uterus. Protecting the neighbouring parts with slips of cardboard, he next traced, by means of a cautery heated to a dull red, a furrow some millimetres in depth just below the metallic noose. In this furrow was placed the elastic ligature, formed of a caoutchouc drainage-tube, about four millimetres in diameter, the ends of which, after sufficient constriction had been

made, were secured by a waxed thread. The *serre-nœud* was then removed, not a drop of blood having been lost during the operation. On January 16 the tumour came away, and the patient was discharged at the end of the month. She is now able to undertake the hardest work without either pain or fatigue.—*Med. Times and Gazette*, May 10, 1879.

Medical Jurisprudence and Toxicology.

Poisoning by Prussic Acid as a Result of the Decomposition of Ferrocyanide of Potassium.

Cases of poisoning by prussic acid are common enough, but it is rare to hear of an instance in which the acid has resulted from the decomposition of a ferrocyanide within the body. One instance has been recorded by Professor Sonnenschein, in which the poison was a product of the reaction of tartaric acid on the ferrocyanide. In the following case, related by Dr. VOLZ, of Ulm, in the *Vierteljahrsschrift für gerichtliche Medicin.*, hydrochloric acid was mixed with the ferrocyanide of potassium. A merchant was found dead in his bed. On a night-table near the bed there was a bottle containing a yellow liquid, labelled hydrochloric acid, and a cup containing some drops of this liquid. As he had threatened on several occasions to destroy himself, no criminal interference was suspected. The body was examined on April 11th, about forty hours after death, under a temperature of 55° Fahr.

There was a cadaveric rigidity without any sign of putrefaction. The skin was in general pale, with a slight violet discoloration at the back part of the body. On the right side, under the lower lip, the skin was dry, like parchment, and of a brownish colour. The inside of the lower lip was of a bright red colour, and the epidermis separated from it on contact. The coats of the stomach were softened, and gave way at the greater curvature on the attempt to remove the organ. It contained about two ounces of a dark brown liquid, which was collected in a glass vessel. The mucous membrane was softened, and of a dark colour, but red towards the cardia. The bloodvessels were gorged with coagulated blood, black, and of the consistency of pitch. The duodenum was reddened externally, and the mucous membrane was softened, with patches of redness scattered over it. The vessels were strongly injected, and there was one small ulceration in the posterior coat. The lungs were congested, and presented a number of tubercles. The heart was flabby, and contained dark fluid blood in the right ventricle, and a dark coloured clot in the left auricle. The tongue was of a brownish red colour, dry, and rough; the fauces were blanched. The lining membrane of the œsophagus was softened, and easily broke down under the finger; the bloodvessels were distended with dark-coloured clotted blood. The mucous membrane of the larynx and trachea was of a bright red colour. The brain presented no particularly marked appearance; there was injection of the pia mater, with some serosity in the lateral ventricles.

The condition of the mouth, throat, larynx, œsophagus, and stomach, indicated beyond doubt the action of a mineral acid, but it was doubtful whether this was really the cause of death. There were indications of death from a more rapidly acting substance than a mineral acid. A chemical analysis showed that prussic acid was present in the contents of the stomach. This was readily obtained by distillation, and the saline residue was found to contain prussiate of potash.—*London Med. Record*, Feb. 15, 1879.

Alcohol as an Antidote to Strychnia.

M. HAMEAU, in the *Gazette Médicale de Bordeaux*, relates several experiments made by him with a view to ascertain the effect of alcohol given hypodermically in cases of poisoning with any salt of strychnine. A rabbit, which had been apparently dead five minutes, had a hypodermic injection of one gramme of alcohol. In less than three minutes the extremities were relaxed, and the convulsions were much feebler, and occurred at longer intervals. In twenty-five minutes the animal was on its feet, had no more convulsions, and could eat. The next day it was perfectly well. The same experiment was repeated several times with the same success, while other rabbits which were poisoned with strychnine, and not treated with alcohol, died. The same quantity of alcohol being injected into a rabbit which had not been treated with strychnine, the animal fell into a sort of stupor, and died the next day.

The question is, whether alcohol may be considered as an antidote of the poison itself, or as a powerful sedative, the effect of which on the cerebro-spinal system is diametrically opposed to the action of strychnine, and would, therefore, be found useful in nervous conditions similar to those produced by the poison. It has accordingly been used in a case of spontaneous and traumatic tetanus, but without any effect. It is only fair to add that the patient was dying.—*London Med. Record*, March 15, 1879.

Iodide of Starch as an Antidote to Various Poisons.

In a paper read before the Medical Society of Florence, Dr. BELLINI recommends the iodide of starch as an antidote to poisons generally. This compound is free from any disagreeable taste, and has not the irritating properties of iodine. Hence he finds that it may be easily administered to patients in large doses. Bellini states as a result of numerous experiments, that at the temperature of the stomach, and in the presence of the gastric juice, the iodide combines with a great number of poisons, forming with some of them insoluble compounds, and with others soluble compounds which are innoxious so long as they are not in too large a quantity. This antidote may be safely employed in all cases in which the nature of the poison is unknown. It will be found most efficient in cases of poisoning by sulphuretted hydrogen gas; by the alkaloids and alkaline sulphides; by caustic alkalies; by ammonia; and especially by those alkaloids with which iodine forms very insoluble compounds. It is preferable in this respect to the ioduretted tincture of iodine. In reference to salts of lead and mercury, it aids the elimination of the poison. In cases of acute poisoning, an emetic should be used soon after its administration.—*London Med. Record*, Feb. 15, 1879.

Hygiene.

Filtration Experiments.

The subject of filtration has lately excited a good deal of attention, and the merits of different methods have been much discussed. A large number of experiments have been made at the Army Medical School at Netley, and we feel sure that no apology will be needed for placing before our readers the results of

the investigations of so distinguished an authority as Dr. DE CHAUMONT into the matter. These results may be summarized as follows:—

1. Animal charcoal, in loose fragments, has a very powerful immediate purifying effect; its action is rapid, and, with a sufficient depth of charcoal, water may be carried through pretty nearly as fast as it will run with a moderate pressure. The charcoal acts better somewhat compressed than quite loose. If the water is to be used immediately, the power of the charcoal will last a considerable time, but it is prudent to clean or renew it frequently. The passing of distilled water through it and the use of potassium permanganate are useful, but the only effectual method of cleaning is reburning.

When water which has been filtered through charcoal is stored for any time it soon begins to show evidence of low forms of life, and after a time a more or less abundant sediment of organisms becomes formed. This takes place even when analysis immediately after filtration shows no appreciable amount of organic matter by the albuminoid ammonia process. This may arise in one of two ways, viz., either very minute germs pass through the charcoal untouched, or the phosphates yielded by the charcoal to the water furnish pabulum to the germs from the atmosphere. When water is allowed to remain in contact with animal charcoal which has been used as a filter, it takes up again in process of time as much organic impurity as it had before, and sometimes even more; occasionally it becomes distinctly offensive. Hence, it would seem to be dangerous to allow filters to remain permanently in cisterns, as is the practice in some instances; the charcoal cannot be aerated, and must, therefore, soon get impure.

2. The silicated carbon and similar forms (with the charcoal in porous blocks) are powerful filters at first, but they are apt to clog, and require frequent scraping, especially with impure waters. Water filtered through them and stored shows signs of the formation of low forms of life, but in a less degree than with the loose charcoal. After a time the purifying power becomes diminished in a marked degree, and water left in contact with the filtering medium is apt to take up impurity again, although perhaps in a less degree than is the case with the loose charcoal.

On the whole, the loose charcoal seems to be the more practically useful, as its power lasts longer, it does not tend to clog so easily, and it is more easily cleaned. In neither case, however, is it advisable to store the filtered water or to have water long in contact with the medium. A contact of four minutes is sufficient to purify water with loose charcoal, whereas the solid blocks take a much longer time.

3. Inorganic substances.—Of these the most important at present before the public is the spongy iron. This is a very powerful filtering substance, and is used generally in contact with what is called "prepared sand," a mixture of fine gravel with *pyrolusite*, crude binoxide of manganese. The object of this last substance is to remove the small quantity of iron taken up by the water. The action of spongy iron is slow but complete; about twenty-two minutes is the time for exposure, and this is usually sufficient to purify all but very impure waters. The water filtered shows no tendency to favour the growth of low forms of life, and may be stored with impunity; water may also be left in contact with the medium for an indefinite period without undergoing any deterioration. Another inorganic substance is that used in the "Filtre Chaniot," exhibited at the Paris Exhibition. It is finely ground slag (*scorie de fonte*), and is said to purify water well. This filter is so arranged as to compress the air inside, and so aerate the water, as well as clean the filtering medium when required.—*Sanitary Record*, March 28, 1879.

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JULY, 1879.

Anatomy and Physiology.

Structure of the Lamina Cribrosa.

Dr. E. D. MACKELLAR (*Glasgow Medical Journal*, vol. x., No. 12) considers that, although the proportion differs in different eyes, yet in most cases of the fibres entering into the formation of the lamina cribrosa, those of the choroid are in excess of those derived from the sclerotic, and that, in some eyes, the choroidal fibres are hardly supplemented by the sclerotic at all. He then discusses the bearing of this fact on hypermetropia, and argues as follows: In every eye in which a great amount of accommodation is necessary to obtain clear vision, the choroid is of necessity pulled upon and strained by the action of the ciliary muscle, and if the lamina cribrosa be mainly formed by that tunic, it follows that the disk, the retina, and its vessels, are all exposed to serious disturbance. Whenever the ciliary muscle contracts, the fibres of the choroid, which pass through and support the optic nerve, are put on the stretch, and the retinal vessels and disk suffer; and, whenever that muscle relaxes, the whole fundus becomes abnormally hyperæmic, from the sudden cessation of tension in the lamina cribrosa. In this manner, the author considers many cases of retinitis, abnormal conditions of the vessels of the fundus, and hyperæmia, with subsequent anæmia and atrophy of the disk, are due, not to central changes or primary alterations in the tissues themselves, but to the effects of choroidal irritation.—*London Med. Record*, May 15, 1879.

Axial Cylinder and Ganglion Cells.

SCHULTZE (*Archiv für Anatomie u. Physiologie Anatom. Abth.*, iv., 1878) thus sums up the results of his observations: "I have succeeded," he remarks, "by means of reagents of very different kinds, in demonstrating a fibrillar structure in the axial cylinder of the medullated nerve fibre, and, in some instances, in the abdomen of the ganglion cell in vertebrata; and I therefore hold it as very highly probable that these primitive fibrillæ correspond to pre-existing structure-elements present in the living tissue. I have further seen indications of this fibrillar structure in the living fibre."—*London Med. Record*, May 15, 1879.

Coagulation of the Blood.

C. H. VIERORDT (*Arch. für Heilk.*, Band xix. p. 198) has been engaged upon a series of investigations as to the time which elapses between the shedding and the coagulation of blood in its normal and diseased conditions. The mode of procedure was by puncture of the thoroughly cleansed skin with a needle or lancet, to obtain a drop of blood of moderate size, which was received into a

capillary tube of one millimetre in diameter. In the capillary tube was placed a clean horse-hair, which became inclosed in the clot, by coagulation. On watching the hair, it was seen to become covered with an adherent clot so long as the coagulation is going on, whilst the part which is withdrawn after coagulation is ended is free from any such clot. This point is noticed, as well as the time of drawing the blood, and the interval between the two is assumed by M. Vierordt to be the period of coagulation. From 262 individual observations the author has found the mean time of coagulation to be 9.28 minutes, a result which is in close agreement with that given by H. Nasse, who stated that ten minutes is the ordinary time. Venous blood obtained from the finger after a ligature had been applied coagulated much more rapidly, differing from arterial blood by an average time of three minutes. A similar acceleration was found in animals which were starved, or which had been previously bled. Numerous observations on the sick gave as a general result that in diseases which chronically affect nutrition, as phthisis, scurvy, and anæmia, there was an increased rate of blood coagulation; whilst improvement in nutrition frequently caused a more lengthened period to elapse before the coagulation took place, as in convalescence after croupous pneumonia. One set of observations, however, did not agree with this rule, as in convalescence after typhus fever an increase in the time of coagulation was not observed, and this was also the case in the increase of the nutritive powers after gastrectasia.—*London Med. Record*, May 15, 1879.

Physiological Movements of the Membrana Tympani.

M. GELLÉ (Société de Biologie, reported in *Le Progrès Médical*, Oct. 26, 1878) has studied the movements of the entire tympanum by means of the graphic method. In ordinary deglutition, as in Valsalva's experiment, the tympanum is displaced. M. Gellé has found, however, that the maximum displacement should not amount to more than one-tenth of a millimetre, to prevent damage to the auditory apparatus; for any displacement of greater extent shakes the fenestra rotunda too much, and modifies the apparatus of hearing. From this physiological fact consequences which are useful for the treatment of diseases of the ear may be deduced.—*London Med. Record*, May 15, 1879.

Materia Medica and Therapeutics.

Action of Iodoform.

HÖGYES (*Archiv für Experiment. Pharmakologie*, x. 3 and 4) endeavours to arrive at a permanent settlement of the discrepancies between the statements made by previous inquirers concerning the toxic and narcotic properties of the compound in question; further, to test the statements recently made by Binz with regard to its mode of operation. The following is a summary of the chief results of his inquiry: 1. Iodoform, in adequate doses, is fatal to dogs, cats, and rabbits. Death is caused by a gradual paralysis of the circulation and respiration; it is preceded by wasting of the body, but not by convulsions. 2. After death, we find fatty changes in the liver, kidneys, heart, and voluntary muscles. One or two hemorrhagic extravasations are almost always present in the lower lobes of the lungs. 3. Large doses cause marked drowsiness in the dog and cat; no such effect is witnessed in the rabbit, even after a lethal dose. During the

period of somnolence, reflex irritability does not appear to be much interfered with. 4. What changes does iodoform undergo before its absorption? If it is introduced in an undissolved condition, the first step is its solution in whatever fatty matter may be at hand (in the intestines, the oily ingredients of the chyme; in the subcutaneous tissue and the serous cavities, the oily constituents of the tissue-juices and serous liquids). The only solution of iodoform next gives up its iodine to any albuminous principles that may be present; the iodide of albumen thus produced is speedily taken up into the blood, while a few minute coagula and colourless oil-globules are left behind. 5. Precisely the same series of changes occurs when a solution of iodine in oil is injected under the skin or into a serous sac. 6. An iodide of albumen prepared by mixing white of egg with a solution of iodine in sodium iodide, produces narcotic effects in the cat and dog, just like iodoform; like this, moreover, it fails to produce them in the rabbit. 7. Whether we administer iodoform, iodine dissolved in oil, or iodide of albumen, the iodine is gradually eliminated from the system in combination with the alkali-metals. Broadly, we may regard the action of iodoform, locally applied, as equivalent to the prolonged and gradual influence of iodine. Its action on the system after absorption is likewise, in the main, that of iodine, but with some hitherto unexplained peculiarities.—*London Med. Record*, May 15, 1879.

Conine and its Salts.

The *Annuaire de Thérapeutique* for 1879, edited by M. Bouchardat, gives an abstract of an inaugural thesis by TIRYAKIAN, on conin and its salts, which possesses considerable interest. The experiments were performed in the laboratory of M. VULPIAN, and the conclusions arrived at were as follows: Conine or conicine is a very unstable substance. As commonly sold it is very impure, and gives very variable results; when pure it has a powerful irritant and even caustic local action. Its hypodermic use should therefore be a subject of careful consideration, and should not be rashly adopted. It appears to be more active when ingested into the stomach than when injected subcutaneously. In the latter case it does not completely disappear, the channels of absorption being partially destroyed by its local action. Hence it should, as a rule, be administered by the stomach. It acts as a poison, both on man and animals; but the organism speedily tolerates it, and owing to this toleration it is necessary constantly to augment the dose. There is no danger under these circumstances of a cumulative action being exerted, since conin is rapidly eliminated from the system. Five grains of conine injected in divided doses into the veins of a moderate sized dog, are eliminated in the course of two hours, provided any symptoms of asphyxia be removed by artificial respiration. The toxic action of conine may be divided into three stages. The first stage is characterized by depression and a feeling of sadness. General rigors then supervene, which are coincident with the acts of inspiration, and about the same time there is loss of power over the limbs. During the second stage the rigors are more distinctly marked; the respiration is considerably interfered with, becoming incomplete, rapid, and sometimes accompanied by chattering of the teeth; the pulse is quickened; reflex excitability is increased. This period lasts from half an hour to an hour. The third period is characterized by the diminution of the convulsive phenomena, the diminution and abolition of reflex irritability, slowing of the pulse and of the respiration, visual disturbances, and finally, profound collapse. A fourth stage might perhaps be added, according to whether the collapse is followed by death or recovery. In the latter case the animal passes through the same phases of intoxication that it had previously presented, only in an inverse order. Sensibility

first returns, violent rigors are then observed, the respiratory and cardiac movements gradually regain their former strength and volume, the animal begins to be capable of performing spontaneous movements, the locomotive power is recovered, a drunken condition follows, and at length, in the course of an hour or two, it walks and runs with ease, appearing only to be a little depressed. Conine is neither a muscular nor a cardiac poison; it acts essentially on the cerebro-spinal centres. The substance which acts on the peripheral extremities of the motor nerves is not conine—it is a kind of empyreumatic essential oil, which M. MOURRUT has extracted from conine supplied from Germany, and which probably exists in all commercial specimens of the drug. The chlorhydrate and bromhydrate of conine are stable salts; they induce symptoms which are identical with those of conine itself, but are more energetic. The fatal effects of a poisonous dose of these substances seem to be due to asphyxia. Physiological antagonism between conine and strychnia is possible, but has not yet been demonstrated. The convulsions caused by strychnia can, however, be suppressed by conine. To obtain any sensible effect of the bromhydrate of conine in an adult man, a dose of at least 1.5 grains is required, and the quantity may be increased to three, four, or five grains, according to the effects required or the tolerance of the remedy exhibited by the patient. The bromhydrate is rapidly eliminated by the skin and lungs, hence the doses should not be too small, nor must too long an interval be allowed to intervene between two doses. As much as fifteen grains of conine, and perhaps more, may be given in the course of twenty-four hours, in the form of pills, syrup, or draught, or the same quantity may be administered subcutaneously, as the bromhydrate does not appear to exert any local stimulant action. The symptoms in man closely resemble those observed in animals. They are, briefly—great muscular weakness, lassitude, fatigue, heaviness of the eyelids, heaviness of the head, difficulty of walking, sleep, or often rather a state of torpor without sleep. The intellectual faculties are perfectly preserved. There is no aberration of the sensibility, except sometimes slight hyperæsthesia and tingling of the fingers and toes, but it is never perverted or diminished. Vision is sometimes temporarily disturbed, objects being seen as through a fog. There is no cephalalgia or vertigo. The pupils undergo no alteration. The pulse remains unchanged. There are no disturbances of the digestive tract; neither nausea, vomiting, nor diarrhœa. Respiration, secretion, and the temperature of the body are unaltered. Infants at the breast are not affected by conine when this is administered to the mother, and they bear small doses well. The author believes that conine will be found to be of service in bronchitis or phthisical cough, and in nervous cough, in whooping-cough, in epilepsy, in neuralgic and articular pain. It is rationally indicated in cases of hyperæsthesia, in chorea, convulsion and trembling, and in tetanus.—*Lancet*, April 26, 1879.

— Action of Quinia.

The action of quinine upon the circulation has been carefully investigated by Dr. GUIDO CAVAZZANI (*Ann. Univer. di Med. Chirurg.*, Milano, Dec. 1878), who finds that in the frog, small, as well as large, doses of sulphate of quinine when brought into contact with tissues which have been deprived of their epidermis, occasion a slowing of the heart-beat. The action of quinine upon the heart is not very marked, but, if it is contracting very rapidly, the muscle becomes pale, the cavity is completely emptied, the heart remains contracted in systole. The ventricular diastole occurs slowly, so that the auricles impel but little blood. Quinine causes great constriction of the arterial and venous capillaries, the constriction bearing a definite relation to the amount injected. The circulation of the blood-corpuscles is hindered in many of the capillaries, but the

author has been unable to decide whether the circulation of the plasma likewise ceases. In moderate doses, quinine may accelerate the peripheral circulation, whilst in larger quantities it impedes, by reason of its constricting action upon the terminal vessels. Quinine has a paralyzing influence upon the respiration. From these observations it may be deduced, *à priori*, that quinine in considerable doses is of use to stimulate the peripheral circulation by limiting the vascular area. In energetic doses it is useful in phlogosis by modifying vasomotor paresis.—*London Med. Record*, April 15, 1879.

Toxic and other disadvantages of Atropia Collyria.

Several cases of poisoning by atropia collyria have come under recent observation, and many of them were discussed at a meeting of the *Soc. de Méd. de Paris*, November 23, 1878. The first case is that of one of the most distinguished chemists in Paris, who had been treated for some time by Dr. LUTAUD for a chronic affection of the respiratory tract. While convalescent he was taken ill with iritis, and consulted an ophthalmologist, who prescribed appropriate treatment, which the patient followed for some days. Suddenly, one night he manifested such violent symptoms, that Dr. Lutaud had to be summoned in haste, and found the patient in a most distressing state. He was delirious, sometimes gay, and at other times furious, his excitement was extreme, and only grew calmer at long intervals. When first seen, he was crouching on his knees and elbows, and uttered long and plaintive moans, as if suffering intensely. Suddenly he would grasp his head with both hands, and become so violent that his attendants could scarcely hold him. He did not recognize any one, could not articulate, and it was utterly impossible to obtain any answer from him. His eyes were prominent, the conjunctivæ injected with livid vessels, and the mydriasis was so strong that the rim of the iris no longer responded to the action of light. He was evidently quite blind. The palpitations of the heart were tumultuous, respiration abrupt, stertorous, irregular, and quick. There was no paralysis, no trembling, no convulsions, the pulse was small, frequent, feeble, and irregular, the skin cool and clammy. Although the pupils were dilated, and Dr. Lutaud knew that his patient had been using sulphate of atropia, yet, as he was ignorant as to the dose of the drug, it did not occur to him to attribute to it these severe symptoms. Dr. Dieulafoy, who was called in half an hour later, was equally at a loss as to their cause. A hypodermic injection of three centigrammes of acetate of morphia was then administered, and soon after the delirium ceased, and a most alarming stupor set in. After a great deal of trouble they succeeded in making the patient swallow a few spoonfuls of strong coffee. It was not till several hours after he had been called in that Dr. Lutaud found out that the patient had the night before suddenly raised the dose of sulphate of atropia from five centigrammes to ten, while the proportion of water remained the same, viz., ten grammes, and that he had used this very strong drug as a lotion every hour, without having previously taken the necessary precautions of compressing for some instants the inferior lacrymal punctum. He then first became slightly comatose, and afterwards delirious, so that there could be no doubt as to the symptoms being due to poisoning with sulphate of atropia. This was also confirmed by the happy effects of the subcutaneous injection of morphia. Eight hours after the first symptoms had shown themselves, the patient could utter a few words, and answer vaguely the questions which were put to him. He was then allowed to sleep for a few hours, and on waking asked his attendants with the greatest calmness what they were doing there; he had not the least remembrance of what had happened, and felt perfectly well, with the exception of a rather quick pulse, a feeling of dryness in the throat, and dilatation of the pupil.

A few days later he could again attend to his business without any further complications. It is one of the characteristic phenomena of atropia poisoning, that the symptoms disappear very rapidly, and Dr. Lutaud quotes several cases where the patients had been taken to the hospital shortly after the symptoms of poisoning had manifested themselves, and awoke very much astonished in finding themselves there. They could not in the least remember what had happened, and were quite well after forty-eight hours.

It appears, from what has been said, that eye-lotions and applications which contain atropia may penetrate into the puncta lacrymalia, and thence into the pharynx and digestive tract, thereby causing very serious toxic symptoms. These accidents, however, do not last long, and are remarkable for the suddenness with which they both appear and disappear. Precautions ought to be taken to avoid them by compressing the puncta lacrymalia during the application, and thereby preventing the liquid from passing into them and thence into the pharynx. The most experienced oculists, such as Desmanes, Galezowski, Meyer, Von Wecker, Abadie, Camuset, Fieuzal, and Gillet de Grandmont, are all of opinion that, as a rule, poisoning through a collyrium containing neutral sulphate of atropia does not often occur, and then only in the case of old people.

PELTIER in his thesis on the subject (*Thèse de Paris*, 1877), says that the symptoms vary exceedingly in intensity, from a simple heightening of the temperature to a general intoxication, but in every case they must be ascribed to an idiosyncrasy which cannot tolerate atropia. They either appear suddenly after one or more applications of the drug; or after the treatment has been carried out for some time. Another peculiarity is that the accidents are sure to be repeated, even after the treatment has been interrupted for months, and sometimes if only one drop of the one-thousandth part of a solution of sulphate of atropia is dropped into the eye. Mackenzie has observed hallucination in such cases; Testelin attacks of acute delirium. M. Richet had under his care in 1858, at the Hôpital des Cliniques, a patient who had been operated on for cataract, and who every night after atropia had been dropped into his eyes had a violent attack of fever with intense delirium. M. Galezowski quotes the case of a patient who collapsed and lost consciousness after the use of this drug. The following are the characteristic symptoms of atropia poisoning: dryness of the mouth and throat, unquenchable thirst, loss of taste, feeling of numbness in the face, excessive mydriasis, cephalalgia, vertigo, giddiness, photopsia, and delirium. It seems as if in general the anti-atropic idiosyncrasy is determined by the primary affection of the eye, although cases have been observed where it showed itself only after a prolonged treatment, or even suddenly after iridectomy had been performed or the patient operated on for cataract.

M. Peltier quotes in his thesis the following cases where the idiosyncrasy suddenly showed itself after an operation:—

A woman, aged 46, who was suffering from double iritis and interstitial keratitis, had iridectomy performed by M. Galezowski, who prescribed two drops per diem of a collyrium containing one centigramme of neutral sulphate of atropia dissolved in ten grammes of water. On the first day, the patient complained of dryness in the throat and intense headache. The next day, the treatment was continued and the patient complained still more. The collyrium was then stopped, and the symptoms disappeared at once. Two months later, one drop of collyrium containing two centigrammes of the neutral sulphate of atropia in ten grammes of water was given, and as it gave rise to the same symptoms, the treatment had to be given up.

The same phenomena occurred in a man aged 24, after iridectomy, and in another, aged 44, who had been operated upon for granulations of the conjunctivæ.

The first drop of the collyrium caused intense peri-orbital pains and a violent conjunctivitis. A woman, aged 53, had been operated on for a lachrymal ectropion, three drops daily of collyrium, containing the usual proportion of atropia, were prescribed. The next day the patient complained of violent peri-orbital pains, photopsia, and sleeplessness, as well as dryness of the mouth and throat. Two days later, the symptoms had increased, and eczema of the eyelids had set in. The atropia was suppressed and the patient recovered. M. Galezowski quotes the following observations in his *Recueil d'Ophthalmologie*: A young girl, aged 24, who was suffering from an abscess in the centre of the right cornea and violent pains in the peri-orbital region, was treated with leeches and a collyrium, containing two centigrammes of atropia. After ten days she felt weak, her arms trembled, her throat was dry, she had high fever and was delirious every night, and saw everything red (a very rare phenomenon). Her principal complaint, however, was a continuous feeling of nausea and giddiness, which only ceased when the treatment had been stopped.

Another case is that of a child, aged 3 years, suffering from hypopyon and a central abscess of the right cornea, who was treated with the usual dose of atropia. For twelve days all went well, when the mother said that her child had been delirious and had had convulsions during the whole of the preceding night, after the atropia had been dropped into her eye. Instead of three drops two were then given, and during the following five nights the child was delirious, asked for something to drink throughout the day, and moaned continuously, pointing to its forehead as if it were painful. The atropia was stopped, and the symptoms suddenly ceased.

Death has been seldom known to follow in those cases of poisoning. Desmanes only quotes one instance of it, where the patient, an infant, aged four months, died of convulsions after the use of a lotion containing the usual dose of atropia. In another case, the patient, an old lady, became violently excited and attempted to destroy herself. Cessation of the treatment immediately restored her to her normal mental condition.

Dr. MEYER, one of the leading oculists of Paris, has recorded the following cases which came under his immediate notice.

A painter had been for some time under Dr. Meyer's treatment for acute iritis of the left eye, and had used a collyrium containing four centigrammes of sulphate of atropia and ten grammes of water. He had been told to use great precautions every time he applied the drug, compressing the puncta lacrymalia, keeping the eyelids closed for a few moments, because movement of the eye tends to increase the action of the lachrymal ducts; also to wash his eye carefully with warm water after opening the eyelids. This treatment had been carried out successfully for more than a month, when suddenly the general state of the patient became alarming; his eye was better, but his temperature was very high, he had no appetite, complained of feeling ill, slept badly, was delirious, and had optic hallucinations. As the pupil of the right eye (the healthy one) was dilated, it was suggested that atropia might possibly be at the bottom of this state of things. The patient being closely questioned, confessed that he had neglected to carry out the doctor's prescriptions during the last week. The drug was not administered, and the patient soon recovered. In some cases atropia may be dispensed with without any detriment to the eye, if such alarming symptoms should appear; but in other cases when it is absolutely necessary that the patient should be treated with atropia, the medical man is placed in rather a dilemma, as, *e. g.*, in cases of iritis. Dr. Meyer has attempted in similar cases to counteract the dangerous effects of atropia by hypodermic injections of morphia, and has always found these answer very

well. If the injection is made at night, the patient may use the atropia during the day without experiencing any bad results.

The following case of Dr. Meyer also tends to prove the antagonistic action of morphia towards atropia. The patient had been operated upon for cataract by discision, and used a solution of atropia for the purpose of keeping the pupil dilated while the cortical substance was being absorbed. As he happened at the same time to be taking a solution of arsenic for his general health, he mistook the drug, and one day swallowed by mistake fifteen drops of the atropia solution three times. He was in a most alarming state when seen by Dr. Meyer, had lost his voice, could not swallow, had vertigo, hallucinations, and was tormented by an incessant desire to micturate, which he could not satisfy. An injection of morphia was then given, and twenty-five minutes later the patient was able to pass his water. An hour and a half later on, the symptoms of intoxication re-appearing again, a second injection was administered, followed by a third in the course of the night. The next day the patient had completely recovered. The question has naturally arisen whether the poisonous drug is really absorbed through the lachrymal ducts, and subsequently through the mucous membrane of the digestive tube, or if the absorption does not rather take place through the conjunctivæ, which are known to possess very rapid powers of absorption. This question has not yet been answered satisfactorily, and the opinions of authors vary much on the subject.

As atropia is apt to give rise to such troublesome and dangerous symptoms, the desire has naturally arisen to discover some other substance which possessed all its efficient properties without its drawbacks, and might be used in its place. Several alkaloids have been suggested, such as daturine, hyoscyamine, eserine, duboisia, gelseminium, and chlorhydrate of pilocarpine.

VON WECKER thinks that eserine will take the place of atropia in the treatment of affections of the cornea, for the following reasons: 1. Eserine lowers the ocular pressure, while atropia increases it by dilating the vessels. 2. Eserine diminishes the secretion of the conjunctivæ by contracting the vessels, while atropia increases it. 3. It reduces diapedesis, but atropia, by pushing the iris back towards the corner of the anterior chamber, is apt to retain in the eye fluids which ought to be allowed to flow out. Meyer and Galezowski have both used duboisia with great success in cases where atropia could not be tolerated. It is, however, a curious fact that in some patients duboisia has produced conjunctivitis, and had to be replaced by atropia, which did not cause any evil results. It has also once or twice given rise to general symptoms of poisoning.

Chlorhydrate of pilocarpine seems to act very much like eserine in affections of the cornea.

SCHROFF, in comparing the therapeutic effects of atropia, daturia, and hyoscyamia, says that the two latter are less apt to produce dryness of the throat and skin, etc., than the first. The delirium caused by atropia is a very violent one, the patient is apt to burst suddenly into fits of uncontrollable laughter and to throw himself about wildly, while the delirium caused by hyoscyamia is of a calmer nature, the patient feeling inclined to sleep and rest. Neither does it cause paralysis of the sphincters of the rectum and the bladder like atropia and daturia, although it acts powerfully upon the sphincter of the iris.

Last, but not least, chlorhydrate of gelseminium may be safely used instead of atropia; it dilates the pupil, and does not paralyze its powers of accommodation for more than thirty hours. This is very convenient for the patient, as he is then enabled to resume his general occupations, and read or write, which is of course entirely out of question after atropia has been dropped into the eye.—*London Med. Record*, May 15, 1879.

Use of Pilocarpinum Muraticum in Children's Diseases.

WEISS (*Pest. Med. Chir. Presse*, 1879, 2) has had the opportunity of observing the effects of pilocarpine in fourteen cases where the patients were suffering from nephritis, complicated with general dropsy, following scarlatina. In four cases there existed extensive bronchitis, in two diphtheria, and in one pneumonia of the left side of the lung. In each of these cases the results produced by pilocarpine were most favourable, and the patients could all be dismissed as cured. One of the most important properties of pilocarpine is that it prevents the dropsy from increasing, keeping it stationary without implicating the kidneys, till the latter have recovered their power of secreting urine more abundantly. Two different kinds of solutions were used for the hypodermic injections; a 1 per cent. solution for children under four years, and a 2 per cent. one for children above four years. In such young patients, where collapse seemed to threaten from prolonged illness and great weakness, 4 or 5 drops of ether were added to the solution of pilocarpine in the syringe. The author observed, that whenever he used this mixture, the young patients did not present the phenomena which generally followed the injection of a solution of pure pilocarpine, viz., vomiting, nausea, hiccough, pallor, and a feeble pulse. The injections were made once daily into the upper arm, beginning with half a syringe-full, and rising to a whole one. The effects of pilocarpine generally appeared after a few minutes, beginning with a slight flush on the face, which, however, gradually increased, and only disappeared when the perspiration had ceased. The latter set in after three to five minutes, beginning on the forehead and face, and gradually spreading over the rest of the body. The duration of the perspiration was different; in one case it lasted for 1½ hours, in another 3½ hours, in a third case, of very considerable universal dropsy, where the amount of urine passed in the 24 hours was only 150 c.c.m., the secretion lasted for 15 hours, after which, the oedematous infiltration decreased considerably. The quantity of fluid secreted in the saliva and the perspiration were in direct proportion to the amount of pilocarpine which had been injected, and to the strength of the solution. Thus, a 2 per cent. solution always called forth a more considerable secretion of perspiration and saliva than a 1 per cent. solution. Two out of the fourteen patients complained of pains in the abdomen after the injection, and four of headache. In eight cases, the pupil was seen to contract; the contraction began at the same time at which perspiration set in, and lasted from 30 to 45 minutes. The temperature was taken in every case both before and after the injection, and in several of them was observed to fall rapidly after the injection; this decrease, however, never lasted longer than from half an hour to three hours, after which time the normal temperature was again reached. Only in one case, where the perspiration had lasted for 16 hours, the temperature, which had been 40.4 deg. Cent. before the injection, fell to 38.6 35 seconds after it, and did not rise again. The pulsations of the radial artery increased in a minute from 12 to 30; the pulse was full and jerking; this acceleration lasted from 15 to 30 minutes, after which time the pulse regained its previous character. In four cases, the patients vomited. The vomited matter consisted mostly of mucus. After the injection, almost all the children coughed very much; in four cases where there was extensive bronchitis, and in a fifth, which had been showing symptoms of oedema of the lungs and uræmia, the lungs were entirely cleared from the secretion which had accumulated in them by the frequent coughing within 48 hours. In nine cases, there was a strong desire to micturate immediately after the injection; and, in three, to evacuate the bowels. The motions were thin and very offensive, and were passed in great quantity. In a case of constipation which had lasted four days, the bowels were moved copiously immediately after the injection.

There was no notable increase in the quantity of urine passed after pilocarpine had been injected; it was of a much lighter colour than before. The following are the author's conclusions: 1. Pilocarpine has proved to be a very successful remedy for children who suffer from nephritis and scarlatina; 2. In giving it to children, care should be taken to begin at first with small doses, which may later on be gradually increased; 3. If the little patients are very weak and are likely to collapse after the injection, a few drops of ether should be added to the pilocarpine solution; 4. The drug produces a very copious and lasting secretion of sweat, such as no other drug ever has been known to call forth—it acts quickly; 5. In cases of bronchitis, complicated by dropsy, which often produces dyspnoea in children, the affection of the bronchi vanishes very soon after the remedy has been administered.—*London Med. Record*, May 15, 1879.

Medicine.

Pathology of Addison's Disease.

In the *Archiv de Physiologie Normal et Pathologique*, 1879, Nos. 5 and 6, M. JACQUET arrives at the following conclusions: 1. In Addison's disease, the bronzed skin one finds only as a lesion of the sympathetic system, and pigmentation, without atrophy, of the nervous cells of the ganglia which are in the neighbourhood of the diseased suprarenal glands. 2. The degeneration of a part of the nervous fibres attaching the semilunar ganglia to the nervous centres ought to be regarded as secondary and consecutive to the process of sclerosis which accompanies the tuberculization of the capsules. 3. That lesion is insufficient to serve as the basis of a pathogenic theory of Addison's disease. 4. Hyperpigmentation of the nervous cells of the great sympathetic and of the cerebro-spinal system is a fact of the same order as the hyperpigmentation of the epidermic cells of the Malpighian plexus. 5. This hyperpigmentation renders probable the existence of an alteration of the blood by the substances which a suprarenal gland would, in the normal state, be employed in utilizing by transforming them. 6. The alteration of the blood by functional or organic insufficiency of the suprarenal glands is a pathological phenomenon analogous to that which exists in chronic uremia. 7. Alongside of the melanodermia, by alteration of the suprarenal tissue, there seem to exist cases in which the melanodermia is due to the lesion of other blood-making organs. 8. Clinical researches in Addison's disease ought especially to be directed to the chemical analysis of the blood and the urine.—*Lond. Med. Record*, April 15, 1879.

Retrogressive Lymphadenomatous Growths.

At a recent meeting of the Pathological Society of London (*Med. Times and Gazette*, May 17, 1879) Dr. COATS, of Glasgow, exhibited for Dr. Gairdner, specimens of tumours taken from a man aged fifty-two, who had been under the care of Drs. Thomson and Norrie, of Dumfries. About twelve or fourteen months before his death, the patient began to observe tumours in his abdominal wall, the tumours appearing and disappearing at intervals, according to his own account. After six or seven months he was seen by Dr. Thomson, who then found a large tumour, four inches by three, in the abdominal wall, near the anterior-superior spine of the ilium, having the characters, when first seen, of a fatty growth; it was repeatedly examined at short intervals for a week or two, but

after a few months had passed could not be seen at all when again looked for. Ten months after the first appearance of these swellings the patient's general health began to fail, and he suffered from sickness and vomiting. He was now seen by Dr. Gairdner, who found as many as thirty-four tumours over the body, most of them being situated subcutaneously, though some were deeper. The patient's sickness and vomiting continued, and death took place soon afterwards. Post-mortem there were found numerous tumours, not only in the subcutaneous tissues, but also in the connective tissue of the abdomen. In the fatty capsule of the right kidney there were several, quite distinct from both the kidney and from the supra-renal capsule. The left supra-renal body was apparently involved in a mass of similar tumours, many of which were breaking down like blood-clots. One large tumour almost occluded the calibre of the intestine, and there were several in the mesentery. He (Dr. Coats) had found the tumours composed of a coarse reticulum, in which there were many round lymphoid cells. The tendency seen in several of them to hemorrhage and breaking down might possibly explain the absorption and disappearance of those that had vanished during the life of the patient. The exhibitor requested that the specimens be referred to the Morbid Growths Committee.

Dr. NORMAN MOORE asked whether any change had been observed during the life of the patient in the condition of the blood. In a recent case in St. Bartholomew's Hospital, where there had been many tumours in various parts of the body, among them a large one near the kidney, the white blood-corpuscles had been found markedly increased, though hardly to the degree characteristic of leucæmia. But in that case there had been no history of absorption of the tumours.

Dr. GEORGE THIN had seen a case at Vienna, in the *clinique* of Hebra, exactly similar to the one reported by Dr. Coats, only there was even a greater number of superficial tumours in the former than in the latter case. That one had been unique in Hebra's experience, and there was much discussion as to its real nature. Post-mortem, many growths had been found in the cellular tissue of the abdomen, as in Dr. Coats's case. Some of these had been sent to Ranvier of Paris for examination, and he had declared them to be lymphoid in character. He (Dr. Thin) did not see that such growths should necessarily be considered lymphoid, although they were found to contain lymphoid cells, for any inflammatory lesion under the skin would be attended with the exudation of white blood-corpuscles. Another case has just been reported by Dr. Duhring, of America, under the name of inflammatory neoplasm, which also seemed from the microscopic description to be of a similar nature.

Sir JAMES PAGET said the report of such a case was useful, and likely to help in the explanation of those rare instances in which tumours diagnosed to be cancerous had disappeared after a time. He suspected that there was a greater number of such cases on record than might be imagined, and the collection of them would be an interesting and important undertaking. Three cases of the disappearance of tumours in this way were known to himself. One was in the person of a young man, who had suffered for two or three years with what appeared to be ordinary lymphadenomatous growths, there being clusters of enlarged glands in the neck, axilla, and groins. The patient had also paraplegia—a symptom he had found in another case of lymphadenoma. Within a week these tumours all suddenly disappeared, but the patient then began to suffer from dyspnœa, and soon afterwards died, no autopsy being allowed. Another case, mentioned in his lectures at the College of Surgeons, was regarded as one of multiple medullary cancer (what would now be called small-celled sarcoma), and the microscope corroborated this diagnosis. The growths occurred in the neck and axilla. There was also a very large mass over one deltoid, which suppurated and sloughed, during

which process nearly all the other growths disappeared. The man recovered, and enjoyed good health for some months; but the growth afterwards recurred, and caused death. The third case was one which he had diagnosed as medullary cancer of an undescended testis. There was a tumour as large as two fists, and he had prescribed liquor potassæ and iodide of potassium, under which treatment the mass soon entirely disappeared. In eight or ten weeks, however, it recurred, but disappeared again under the same treatment. This also happened a third time; but, having recurred a fourth time, it was no longer amenable to treatment, and the patient died. The microscope confirmed his original diagnosis as to the nature of the growth.

Dr. WILKS also thought that such cases were not so very rare as was thought. There was at present in Guy's Hospital a girl who had had tumours of the arm, shoulder, and groin. All the tumours had disappeared except that of the arm. He had regarded them as of a lymphoid character. Many years ago he brought before the Society a young woman who presented at first a number of soft tumours over the body, which afterwards disappeared. These were regarded at the time as blood-cysts, but they may have been of the nature of these lymphoid growths.

Mr. BUTLIN recalled the case of a boy he had already brought before the Society, in which there had at first been tumours in the parotid region, and afterwards in the testes and abdomen. All the tumours were found to be lymphosarcomatous on microscopic examination. The left testicle had increased in size till death; while the other had diminished somewhat though not entirely. He had found the pelvic glands much more affected on the right side than on the left, and he had a notion that this difference was connected with the changes of the testes, those on the right side having probably become more involved as they relieved the testicle of that side of its morbid products, whereas on the left side the testicle had gone on unrelieved.

The PRESIDENT mentioned that, in the discussion on lymphadenoma, Sir W. Gull had stated very prominently that he had seen spontaneous disappearance of lymphoid tumours in this way.

Dr. BARLOW mentioned the case of a boy in which lymphadenomatous tumours of the mediastinum, which had deflected the trachea from the middle line, rapidly disappeared at that site before death. He had seen another similar case attended with considerable pyrexia. In a third case, a patient of Dr. Stephen Mackenzie, the tumours had rapidly disappeared under arsenic.

Dr. STEPHEN MACKENZIE corroborated the last statement. The patient, after taking fifteen drops of liquor arsenicalis daily for a week, began to improve, and after a fortnight the swellings diminished so rapidly that the patient declared most of the diminution had taken place in a single night. He believed the patient was now quite cured. Another case, presenting subcutaneous tumours believed to be of syphilitic origin, had been treated with iodide of potassium, and in three weeks the tumours had entirely vanished. Syphilitic growths were of course very similar histologically to these lymphadenomatous tumours, and when the former disappeared so quickly with iodide of potassium, he thought it need not be wondered at if the latter should also be found to disappear very rapidly.

Dr. WILKS wished to add his testimony to the great value of arsenic in these cases of lymphadenoma. All the cases he had seen improve had been treated with arsenic.

Dr. COATS, in reply, could not say whether the blood had been examined during the life of the patient. The object in view in bringing forward the case had been already in a great measure attained by the interesting discussion it had called forth.

Prevention of Relapses in Typhoid Fever.

IMMERMANN is of opinion (*Centralbl.*, No. 1, 1879) that relapses in cases of typhoid fever are due to the presence of the typhoid poison in the system, except in instances where the patient has committed some error in diet. The latter occurrence can of course be prevented by watching the patient carefully, and the author has endeavoured to prevent the former by putting the convalescent through a systematic process of disinfection. The process consisted in giving the patients daily from 4 to 6 grammes of salicylate of soda for ten or twelve days, beginning from the first day the temperature assumes its normal state. Fifty-one patients were treated in this way, and only two suffered from relapses; one owing to something she had eaten in secret, and the other because, owing to a mistake, the drug had not been given to him immediately after the fever had left him. Fifteen out of sixty-seven patients who had not been treated with salicylate of soda had relapses. The author concludes from these observations, that salicylate of soda is not only a powerful preventive of relapses in cases of typhoid fever, but that it also would prove very useful in procuring immunity from the disease for the nurses and attendants.

Immermann has also observed that patients who had been treated exclusively with cold water showed a greater tendency to relapse than others who had undergone a combined water and quinine, or salicylate of soda treatment.—*London Med. Record*, May 15, 1879.

The Doctrine of Uræmia.

The doctrine of uræmia, in the literal sense, has almost disappeared from theoretical pathology. Frerichs and Gallois are believed to have demonstrated that whatever poison is circulating in the blood it is not urea. Gallois especially maintained that urea injected into the blood of dogs is incapable of causing the symptoms of "uræmia." It cannot, however, be said that the attempts at any other explanation have been more successful. The carbonate of ammonia theory has never received enough evidence to render it even probable, while Bernard demonstrated that this substance is incapable of determining the symptoms which have to be explained. The doctrine that the poison is really urea has been revived by M. Picard, of Lyons, in a recent communication to the Société de Biologie of Paris. He states that he has succeeded in causing in dogs convulsive attacks by the injection of urea. As an example of these experiments he gives the following: Fifteen grammes of urea were injected in solution into the jugular vein of a dog weighing two kilogrammes and a half. The animal, after some minutes and some attempts at vomiting, presented tremor and then an epileptiform convulsion. The head was thrown back, the jaws champed, and clonic spasm was equally intense in all four limbs. The attack lasted some minutes, and was followed at short intervals by two other identical attacks. After that the animal was motionless, in a state of muscular relaxation, and soon died.

The explanation of the occasional failure of the experiment M. Picard believes to be this. If a sufficient quantity was injected, there coincided with the above symptoms a complete suppression of the urinary secretion. The bladder emptied itself at the commencement, and remained empty till death. On the other hand, if an insufficient quantity was injected, there was an enormous increase in the urinary secretion, and the urea was eliminated as fast as it entered the blood. In this way large quantities of urea could be injected gradually without inducing any other trouble than polyuria.

M. Picard concludes from these experiments that urea is doubtless the cause of the nervous symptoms of renal disease. This is probably an inference hardly war-

ranted by the results obtained. He certainly, however, has demonstrated an important source of fallacy in experiments on this subject, and has shown that the theory of a true uræmia cannot be considered as altogether defunct.—*Lancet*, May 24, 1879.

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Meningitis cured by Iodide of Potassium.

M. RODET relates, in the *Lyons Médicale*, a remarkable case of meningitis, which has suggested to him interesting reflections on the subject of the employment of iodide of potassium in this disease. A girl of 18 had reached the eighteenth day of a well-marked acute meningitis, which had produced paralysis of the right arm, when M. Rodet prescribed for her 3 grammes of iodide of potassium every twenty hours. The following night the patient showed slight improvement, and began to recover a little consciousness. Next day the dose was raised to 4 grammes, and, the following day, to 5 grammes, and continued at that for the subsequent days. She improved under this influence, made rapid progress, and, five days afterwards, the patient might be considered as convalescent. The paralysis of the right arm had completely disappeared. M. Rodet observes that this treatment of meningitis has been recommended by several practitioners, and nevertheless may be said to remain almost completely unknown. It was particularly indicated by Dr. Bourrousse of Laforre, who praised it very highly, even declaring it to be an infallible remedy. It is probable that the reason the remedy has not been more generally used, is because physicians who had tried the treatment have given it with too much timidity and in too weak a dose to obtain a curative effect, and thus have been led to think it ineffective. M. Fonssagrives, in his *Treatise on Therapeutics*, mentions the opinions of various other writers on this subject, and concludes that iodide of potassium constitutes an important improvement in the treatment of an affection, the incurability of which is notorious, and that this means cannot be too highly recommended. He adds, however, that this medicine ought to be given from the outset of the disease, before it has produced serious disturbances in the membranes and the brain. M. Rodet thinks, nevertheless, that iodide may render service even at a more advanced period of the disease.—*London Med. Record*, May 15, 1879.

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Sclerous Basillary Meningitis.

Dr. LABARRIÈRE has published in his thesis (*Thèse de Paris*, 1878, and *Bulletin Général de Thérapeutique*, December 15, 1878) ten cases of this peculiar affection, which is seldom met with in private practice, and therefore rather difficult to diagnose. The only certain etiology of sclerous basillary meningitis is tertiary syphilis. The plaques compress the cranial nerves, thereby giving frequently rise to paralysis of the motor nerves, and sometimes of the sensory nerves. These paralyzes are, with very few exceptions, permanent. This form of meningitis is generally accompanied by encephalic complications, some of which are of a syphilitic origin, and independent of the meningitis, while others result from the latter. In spite of its clearly defined syphilitic character, a specific treatment has very little effect on the meningitic exudation, and the patient seldom recovers from it. The most important point, therefore, in the treatment is to prevent the exudation from forming, and a very energetic antisyphilitic treatment must be at once begun with a patient with a history of syphilis, in whom we find a paralysis of some cranial nerve complicated with persistent headaches. The author strongly recommends in such cases mercurial frictions, combined with iodide and bromide of potassium, taken internally, Van Swieten's liquid, or a seton in the region of the neck, etc.—*London Med. Record*, May 15, 1879.

Contributions to the Pathological Anatomy of Acute Delirium.

JEHN (*Arch. Psych.*, viii. page 594) has had the opportunity of observing and studying four cases: the first patient was ill for twenty-two days, and eight days before he died gangrene of the right leg set in, beginning at the foot, and spreading rapidly over the whole limb. The right forearm, from the hand to the elbow upwards, was also similarly affected. At the necropsy, an unexpected complication was met with in the shape of a hard tumour, of the size of a nut, on the left side of the pons, which seemed to spring from the acoustic nerve; the ganglia of the sympathetic cardiac plexus were partly degenerated, and the cortex of both kidneys showed fatty degeneration.

The second case lasted for sixteen days; a few days before death phlegmonous inflammation of the right foot set in, and on the night preceding the end, the patient's back, abdomen, and legs were covered with numerous pustules. At the necropsy the latter were found to communicate with abscesses under the skin. The liver was partly in a state of fatty degeneration, and the capsules of the kidney very adherent, the cortex being of a yellowish tinge.

In the third case, the patient was delirious for twenty-six days; in the course of the last six days a gangrenous phlegmon of the right leg set in. The liver was swollen, and in a partial condition of fatty degeneration, the cortical layer of the kidneys of a yellowish hue and adhering to the capsules. The author considers this case, as well as the fourth, as being closely allied to acute paralysis.

In the latter, acute delirium set in towards the end of an illness which had lasted four months; it broke out while the patient was under mercurial treatment for syphilis, and lasted for fourteen days. Here also a gangrenous inflammation was observed, similar to those which have been described above, which broke out in the vicinity of an open syphilitic ulcer on the right thigh. At the *post-mortem* examination, the posterior columns were found in a state of gray degeneration.

In comparing the results of the microscopical examination in all four cases, they were found to be alike in several points. The pia mater was always thick, dark, and of the consistence and appearance of jelly, the vessels, especially in the gray matter, were all more or less in a state of fatty degeneration, and traces of small hemorrhages could be detected in their vicinity. The nervous system seemed to have been affected secondarily, the affection manifesting itself in a fatty degeneration of the cells of the ganglia; in some cases the former had entirely vanished, and in their place only a large mass of fatty globules could be seen, while in other cells the change had hitherto confined itself to the nucleus, increasing it in size. The author is of opinion that such cases ought to be considered as acute meningo-encephalitis.—*London Med. Record*, May 15, 1879.

Ergot in Insanity.

Dr. ENRICO TOSELLI (*Archivio Italiano*, Settembre, 1878) has a long paper on the effects of ergot of rye in the treatment of mental derangement. He thinks that this drug produces cerebral anæmia, its action being the reverse of nitrite of amyle. In fact, he has found by experiment that, contrary to the opinion of Schüller, the cerebral vessels contracted by ergot may be dilated by the inhalation of nitrite of amyle. Brown-Séquard demonstrated that the primary effect of ergot was the contraction of the bloodvessels in all the organs in the body, as well as the contraction of the fibres of the uterus. Vokes obtains favourable results in treating hemicrania; Silva, in the treatment of cerebral hyperæmia; Crichton Browne, in the congestive form of mental alienation in recurrent mania, in chronic mania with lucid intervals, and in epileptic mania. Dr. Toselli found it of great use in treating serous diarrhœa, a frequent complication of dementia,

especially in the paralytic form. In administering it for this purpose he observed that his patients passed out of the state of sleeplessness, and that their mental faculties were less obtuse. He either used the aqueous extract of the *Secale cornutum*, or the *ergotin Bonjean*, given twice during the night in doses of from 50 centigrammes up to as much as 4 grammes. He found that ergotin acted most quickly and surely in the form of hypodermic injection. Ergot diminishes the frequency of the pulse, contracts the vessels, augments the pressure of the blood, and lowers the temperature. Digitalis has more power in moderating the action of the heart, whereas ergotin has a greater effect upon the bloodvessels and in diminishing the temperature. Sometimes ergotin acts as a diaphoretic and diuretic. Sometimes the therapeutic effects have not appeared with a large dose, and only manifested themselves when it was reduced. Sometimes the calmative effect following the use of ergotin lasted as long as a month. Toselli used the drug in thirty cases and found the most benefit from it in paralytic insanity, in chronic mania, and in dementia accompanied by agitation, insomnia, hallucination of the senses, especially when these symptoms accompany melancholia and hypochondria. He does not pretend to have cured any case of insanity with ergotin, though he thinks it may arrest the course of general paralysis.—*Brain*, April, 1879.

Pleuritic Epilepsy and Hemiplegia.

In 1875, M. Raymond read before the Société des Hôpitaux two very interesting observations on the subject of patients who were suddenly seized with convulsions and hemiplegia, some time after having been operated upon for empyema, while injections were being made into the pleura. Several similar facts have since been observed which M. AUBAIN has, together with a case which had come under his own observation, worked up very successfully in his thesis (*Thèse de Paris*, 1878, and *Journal de Médecine et de Chirurgie*, February, 1879). The *modus operandi* is as follows: A patient who has been suffering from purulent pleurisy, and on whom the operation for empyema has been performed, has his wound washed out every day with some disinfectant. He bears these injections without experiencing any inconvenience or pain for a month, six weeks, or more, when suddenly, without any premonitory warnings, the patient, who is sitting up in bed while the injection is being made as usual, falls backwards in a state of imminent syncope. In a very short time convulsive spasms come on; they are almost always universal, but generally stronger on the side which corresponds to the empyema. The patient's teeth are set, the pupils, which have at first been contracted, are subsequently dilated. The tonic convulsions are followed by contractions; the breathing becomes stertorous, the patient foams at the mouth; urine and feces are passed involuntarily; he remains in a state of epileptic coma for half an hour or an hour, when he again recovers consciousness. Sometimes nothing more occurs, or another similar fit may supervene the same day, or two or three days later, without any injury to the patient. But in some very serious cases the patient does not recover consciousness; fit follows fit; the contractions persist; in a few cases opisthotonos has been observed, and the patient dies in ten or fifteen hours. This is termed pleuritic epilepsy. In some cases, however, another phenomenon has been observed in connection with those already mentioned, viz., hemiplegia. It may affect only one of the lower or superior extremities, or the face, the paralyzed members always being on the side which corresponds to the empyema. Motility is seldom entirely abolished, so that the affection might perhaps rather be defined as a certain degree of paresis, without any distinct disturbances of the sensibility. It is transitory, and if the patient recovers from the attack it also disappears a few days later. Lastly, there

is a third class, in which the hemiplegia comes on gradually without any preceding convulsions. The symptoms are the same as above, but the affection always disappears entirely after a certain time. That these accidents are very dangerous is demonstrated by the fact that four out of the ten cases mentioned by M. Aubain have terminated fatally. At the necropsy, no cerebral lesion which might account for the fatal issue could be discovered; the pathogenesis of the cases is also very obscure. It is very curious that these accidents should always happen when the patient is almost convalescent, and at the moment when the injection is being made. In order to avoid this complication great care should be observed in making the injections into the pleura. Very small quantities of the liquid must be injected at the time, and not too much force used in the operation.—*London Med. Record*, May 15, 1879.

History of Neuritis.

The history of neuritis is not old, and, in spite of numerous researches, its etiology and nature are still very obscure. Inflammation of the nerve, or more correctly the nerve string, may be brought on by three different processes. 1. It may be an acute parenchymatous neuritis, where the nerve tube alone is affected; 2. It may be an interstitial neuritis, characterized by a protracted inflammation of their intra- or perifascicular connective sheaths; 3. It may be a mixed consecutive neuritis, or inflammation of the nerve tubes, originating in their being continually compressed by the increasing growth of their sheaths.

All these lesions are quite clear, and each has its peculiar characteristics, which have been clearly demonstrated by microscopic examinations. But the symptoms which correspond to each of them are far from being clearly defined, and M. Gros (*Lyon Méd.*, March 16, 1879) has passed rapidly over this portion of his work, contenting himself with merely mentioning muscular atrophy and cutaneous eruptions as being the effects of affections of the trophic nerves.

These inflammations of the nerve cords have the peculiar tendency of advancing occasionally towards the nerve centres, and producing secondary alterations in them, and a very important point to be noted is that this secondary spinal affection may manifest itself even when the primary affection has apparently come to a stop. Thus, at a given moment, a peripheric lesion cannot only give rise to medullary symptoms, but also to lesions of the spinal cord.

In short, a neuritis which is disseminated over the peripheric nervous system, can, partly through certain symptoms which are peculiar to it, and partly by extending to the cord, give rise to different syndromi, which clinicians have described under different names.

The author has collected ten cases in corroboration of his views, and among them Landry's case of *acute ascending paralysis*; Duménil's case of *ascending neuritis*; Jaccoud's case of *progressive nervous atrophy*; and Eichorst's case of *progressive acute neuritis*. He acknowledges himself that these cases are incomplete, and present only few points of similarity, but he thinks that they may all be connected by one common symptom, viz., muscular atrophy, which is accompanied by more or less distinct sensory troubles. According to them, there are three forms of disseminate neuritis. 1. An acute form, which lasts generally three weeks, during which time muscular atrophy is not sufficiently developed to be demonstrated clinically, and which ends fatally; this is "acute ascending paralysis;" 2. A subacute form, which lasts from six to twelve months; in some cases the patients recover, and the power of movement is restored in certain parts of the body, while in other cases they die; 3. A chronic form, which is generally met with, and which may last up to five years.

All this classification must, however, be considered as mere hypothesis, as it has not yet been sufficiently proved that all the three forms we have mentioned really belong to the same disease. The connecting link between them is muscular atrophy, but when this is wanting, as in the first form, there only remains a very feeble support for the author's theory, viz., an anatomical lesion, the neuritis. It would perhaps hardly be admissible in pathology to found a whole classification on a simple anatomical lesion, while the symptoms produced by it differ widely from each other in many points.—*London Med. Record*, May 15, 1879.

Treatment of Exophthalmic Goitre.

M. SÉE says, in his book on the diagnosis and treatment of cardiac diseases, that the only treatment of exophthalmic goitre which he has found successful is a combination of hydrotherapy with tinct. veratri viridi. He prescribes the latter in doses of from 10, 12, to 20 drops *per diem*, to be taken in four or five doses, and continues this treatment for several weeks and even months. In this way he has succeeded in curing a young woman who had presented all the characteristic symptoms for fifteen years, and a young girl who, at the age of seventeen, began to suffer from palpitations and hypertrophy of the thyroid gland—a case of exophthalmos, with palpitation.—*London Med. Record*, May 15, 1879.

Amygdalitis.

VERNEUIL asserts (*Gazette des Hôpitaux* and *Lyon Médical*, No. 9, March 2, 1879) that the purulent focus which invariably develops during the last stages of amygdalitis is not situated in the interior of the tonsil, but in its vicinity, viz., in the cellular tissue which separates the organ from its groove. The tonsil does not adhere very firmly to this groove, and when tumefied through the inflammation, it bulges out between the anterior and posterior pillars of the velum of the palate, and moves backwards and forwards at every movement of deglutition. This mobility is one of the principal causes of the formation of the abscess. The gland being continually displaced, a serous bag forms in the connective tissue, which stretches between both pillars and occupies the bottom of the groove of the tonsil. In this serous bag the purulent gathering is formed. The abscess is always very deep-seated, and cannot, therefore, easily be reached by a bistoury, as an incision directed in a straight line towards the tumour which the tonsil forms in the isthmus of the larynx would not be able to reach it. To open the abscess it would therefore be necessary to cut through the anterior pillar of the velum of the palate; this pillar, which is much enlarged and protruding, forms the anterior wall of the abscess; but, at the same time, it is highly oedematous, so that in order to pierce it a very deep incision would have to be made, and, in doing this, the carotid artery might easily be injured. It would, therefore, appear that abscesses of the tonsils had better be let alone. They must not be opened, and it is better to wait and allow the pus to make a way for itself through the anterior pillar. Happily the affection never lasts long, and the abscess generally opens spontaneously on the fourth or fifth day.—*London Med. Record*, May 15, 1879.

New Method of Producing Tuberculosis.

TAPPEINER, the author of this interesting article, which was originally published in *Virchow's Archiv*, vol. 74, page 393, is a physician living at Meran, in the Tyrol, and was led to undertake his researches on this subject, from having frequently observed the fact that healthy girls, who belong to healthy families, and had been nursing consumptive patients, became consumptive and died quickly.

He was more and more impressed with the idea that phthisis was contagious, and suspected the contagion was spread by the attendants or nurses breathing the air impregnated by the patient's expectorations.

His experiments were conducted in the following way: he made animals (dogs, who very seldom suffer from tuberculosis) breathe in a space the air of which had been impregnated, by means of an atomizer, with phthisical sputa that had previously been diluted in water. In eleven cases, with one exception, miliary tuberculosis of both lungs resulted, most of the animals also had tubercles in the kidneys, and some in the liver and spleen. The nodules first appeared in the third week after the first inhalation; a very small quantity of sputa is sufficient to produce the eruption. As the disease was not in every case confined to the lungs only, the author thinks that the action of the inhaled particles is not a mechanical, but a specific one. Identical experiments were undertaken with calves' brains, which had been prepared in a similar way to the sputa, for the purpose of verifying the former experiments, and gave a negative result.—*Lond. Med. Record*, May 15, 1879.

Some Peculiarities in the Night Sweats of Phthisis.

ROUSSELOT (*Revue Médicale de l'Est*, January 15, 1879) regards the night sweating of phthisis as entirely subordinated to the pyrexia, the variable course and evolution of which it closely follows; he looks upon it as an effort of nature to moderate and reduce the febrile movement by a diversion to the surface. He also maintains that if, when there exists a considerable rise of temperature, there be no nocturnal perspiration, we get a diversion towards the intestinal surface, and diarrhoea appears. Moreover, we often observe a curious alternation of these two phenomena, one appearing when the other disappears, and *vice versa*. Hence, he concludes, that it is not always right to check the sweatings, especially when they come on at the commencement of phthisis, and accompany a rapid evolution of the pulmonary tuberculization with high fever and active pulmonary congestion. That in such case, to attack the perspiration is to attack the effect not the cause, and it is not likely, therefore, to be attended with success. But when abundant sweatings occur together, with a normal flow of urine and frequent diarrhoea, then it is necessary to direct our therapeutic efforts to arrest the excessive drain on the system.—*London Med. Record*, May 15, 1879.

Treatment of Cardiac Dyspnœa.

M. SÉE, in his book on the diagnosis and treatment of heart-disease, advocates the use of iodide of potassium in cases of continuous cardiac dyspnœa, either alone or combined with opium, digitalis, or chloral, beginning with doses of $1\frac{1}{4}$ gramme, and rising gradually to 2 or 3 grammes, to be continued for some time. Opium is added in doses of from 10 to 15 centigrammes, in order to counteract the effects of iodine; and chloral is useful in cases where digitalis is not tolerated. The prescription would then be as follows: R. gum julep, 120 grammes; iodide of potassium, 2 grammes; and hydrate of chloral, 4 grammes. To be taken every two hours during the day.—*London Med. Record*, May 15, 1879.

Milk Diet in Heart Disease.

M. SÉE, in his book on the treatment and diagnosis of heart disease, regards milk as a most powerful diuretic; he does not approve of exclusive milk diet, which, in his opinion, reduces the patient to a state of extreme inanition, but prescribes a mixed milk diet of about two litres and a half of milk *per diem*, added to the patient's usual food. This does not in the least interfere with the diuretic

effects of milk. These effects must not be attributed merely to the water contained in the milk, as has been supposed by some authors, because the same quantity of pure water would in no wise produce the same results. It is evident, therefore, that only the sugar and salts possess the diuretic properties, their action being similar to that produced by salts of potash and soda by their osmotic power. These diuretic properties seem to be much more powerful when the milk has not been boiled; it should, therefore, be taken unboiled and fresh from the cow if possible, or, at least, lukewarm, as cold milk does not act in the same way. It seems as if boiling the milk destroyed these properties; nevertheless, it must never be forgotten that some patients can only digest milk when boiled, so that the rule is not without exception.

Another curious point in the action of milk is, that it is equally powerful in cases where the cardiac affection is not combined with dropsy. M. Sée has often observed that patients who either no longer suffered from dropsy, or never had suffered from it, were extremely benefited by a mixed milk diet; the action of the heart became much calmer and more regular, and the palpitations disappeared altogether. M. Sée entirely disapproves of whey and grape cures for patients with heart disease.—*London Med. Record*, May 15, 1879.

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Case of Abdominal Aneurism in a Syphilitic Patient.

M. VALLIN presented, at a recent meeting of the Société Méd. des Hôpitaux (February 28), several preparations from a patient who died from the rupture of an aneurism in the abdomen. The patient, aged 45, had spent the greater part of his life in Cochinchina, and had come back in a state of great dyspepsia, anæmia, and cachexia. He also suffered from violent pains in the lumbar region, the pains being felt particularly when he walked fast or attempted to pass from the recumbent position to the upright one. An anæmic murmur could be heard over his heart, and he complained of palpitations, and entered the hospital in a state of highly advanced cachexia. There was a history of syphilis, which dated about fifteen years back, had disappeared under very energetic anti-syphilitic treatment, but had recurred five or six years later; in fact, a gumma could be detected on the lower part of the leg, as well as a large exostosis, of the size of half a pigeon's egg, in the interosseous space of the same limb. M. Vallin, who ascribed the patient's extreme cachexia and anæmia to syphilitic intoxication, treated him with iodide of potassium and mercurial frictions, which proved successful, as far as the syphilitic growths were concerned; but the pains still continuing, and increasing in violence, he could not help suspecting that there was something else the matter with him besides syphilis. After a close examination he discovered pulsations in the left hypochondric region, and heard a blowing noise; this could only be caused by an aneurismal dilatation; the pulsations of the crural artery on this side were not isochronous with those on the right. The anti-syphilitic treatment was nevertheless continued, and the patient left the hospital, and died suddenly during the act of sitting up in bed. At the necropsy the peritoneal cavity was found to be filled with a great quantity of blood. There were no less than four diverticula on the aorta, three of which might safely be termed aneurisms. The last was situated between the duodenum and the head of the pancreas, and was the one that had burst.

The question is, whether in this case there existed any relation between syphilis and the aneurism. It is well known that the former affection may cause sclerosis of the arteries through proliferation of the cells; this naturally would render some portions of the vessels less resistant to the pressure of the blood, and thereby greatly favour the formation of aneurismal sacs. Aneurisms have also

been noticed before in syphilitic patients, under circumstances which render it almost certain that a relation exists between the two affections.—*London Med. Record*, May 15, 1879.

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Periarteritis Nodosa.

In the first number of Virchow's *Archiv*, Kussmaul and Maier published an account of what they believed to be a "hitherto undescribed peculiar affection of the arteries," to which they gave the name of *Periarteritis Nodosa*. Their patient was a young man, who, after a somewhat irregular life, was attacked by indefinite illness, the principal symptoms of which were increasing chlorotic marasmus, albuminuria, and progressive general paralysis with muscular pains. On *post-mortem* examination they found diffuse infarction of the kidneys, with extensive ulcerating enteritis, and wide-spread granular degeneration of the voluntary muscles; but the most important appearance was a peculiar thickening of the small arteries, usually circumscribed so as to resemble small knots. The branches as large or less than the coronary arteries were principally affected, in the heart, intestine, stomach, kidneys, spleen, and voluntary muscles; in the liver, cellular tissue and the branches of the brachial and phrenic arteries the lesion was less marked. In consequence of this affection the lumina of the vessels were dilated into small aneurisms in some places, in others narrowed, and there was considerable obstruction to the circulation, so that the changes in the kidneys, intestine and muscles, clearly were secondary to the disease of the circulatory apparatus. In a recent number of the same periodical Dr. P. MEYER describes a very similar case. A sergeant in the army, aged 24, of rather dissipated habits, but who had previously enjoyed excellent health and was of a robust constitution, acquired gonorrhœa and a chancre in the autumn of 1876, followed by constitutional symptoms in January, 1877, for which he was treated by inunction. From this time he never regained his former health, but always remained pale and thin; in August he complained of pains in the neck, loins, and calves of the legs, accompanied by fever and abdominal pain, for which he was admitted. His conjunctivæ were yellow, his pulse and temperature were high, he sweated profusely; there were no physical signs of disease in internal organs. In September, his ankles became œdematous, and in October, albumen appeared in his urine. His chief complaint was of abdominal pain, and there was a small quantity of ascites present. He died rather suddenly on October 22, and at the *post-mortem* examination conditions were found very like those in Kussmaul and Maier's case, with the exception of the ulceration of the intestine, which was absent. The size of these nodules varied from a poppy or hemp seed, the usual dimensions, to being occasionally as large as a bean. The affection was less marked in the extremities, and apparently entirely absent in the brain. The larger vessels, the aorta, carotids, etc., were quite healthy. On microscopical examination, these small nodules were found to be aneurismal sacs communicating with the lumina of the vessels, and with thin walls formed of a delicate connective tissue of recent growth. Some of them were obliterated and filled with completely organized thrombus. The nodules were generally situated at the points of division of the vessel. The connective tissue in the immediate neighbourhood was thickened, very fasciculated, and many capillary vessels could be seen in it. As the artery entered the nodule it became dilated and fusiform. The media and interna could be distinguished at first, but after a short distance the whole vascular wall presented the appearance of a bright homogeneous membrane. When the fenestrated membrane was still recognizable, muscular fibres on its outer side presented this shining appearance, which suggested the notion of amyloid degeneration, but iodine and methylaniline gave negative results. In some cases the change from the normal arterial wall to the homo-

geneous shining membrane was quite abrupt. Another peculiarity was that the lesion was not always circumscribed, but sometimes so diffused as to convert a small branch into a stiff yellowish white cylinder. Dr. Meyer believes the disease commences in the adventitia and next involves the media, which gives way. Hyaline masses, sometimes seen in the lumina of the vessels, he regards as derived from the endothelium of the interna. Multiple aneurisms have been described by Virchow in the pia mater, by Baerensprung in the skin; MM. Charcot and Bouchard's observations on miliary cerebral aneurisms are well known; but these differ from the cases now under consideration, by their restriction to a special organ. Cases of multiple aneurism distributed throughout the body have been placed on record by Pelletan, Rokitsansky, and Weichselbaum. Pelletan's case is given without details; he apparently knew nothing of the clinical history. Weichselbaum's case is very similar to the others here alluded to; it is to be found in the *Allgem. Wiener Med. Zeitung* for 1877, No. 28. According to him, the affection commenced by endarteritis, and he regarded the case as syphilitic, relying entirely upon Heubner's position that syphilitic endarteritis has characteristic anatomical appearances. We know now that this is a mistake. It is not at all clear what is to be considered the true etiology of this affection; all the cases were in young men; two of them had led dissipated lives, and had probably drunk too much; one certainly had had syphilis. Dr. Meyer thinks the abuse of alcohol may have directly caused such an increase of blood-pressure as to lead to changes in bloodvessels predisposed to disease by the cachectic state of the individual, whether syphilitic or otherwise. The other point of interest in the cases was the striking resemblance of the symptoms to those of acute trichinosis. Kussmaul and Maier noticed this, and even thought it possible that the aneurisms might have a parasitic origin, suggesting the name *Aneurysma verminorum hominis*. There seems to be no ground whatever for such a hypothesis, and the resemblance in the symptoms is properly explained by the localization of the affection in the muscles in both diseases; in both there is more or less disturbance of the nutrition of the muscular substances, with more or less permanent inflammatory change resulting.

Diarrhœa Adiposa.

SEYDELER publishes the following case in the *Berliner Klinische Wochenschrift* No. 7, 1879: The patient was a delicate lady of 17, mother of a child one year old. She had been suffering from catarrh of both apices of the lungs, consolidation of the apex of the right lung, coughing, and weakness. After spending the summer in two or three watering places, her health had improved, with the exception of one symptom, frequent diarrhœa, which was not amenable to any remedies. When the author first saw his patient, he found her in bed, looking comparatively well. There was a cavity in the apex of the right lung; she did not cough very much, neither did she expectorate much. Her principal complaints were a feeling of lassitude and diarrhœa. The tongue was clean, anorexia prevailed. The posterior wall of the pharynx felt hard to the touch, and protruded like a tumour; the larynx was free, crepitation and whistling could be heard over both apices of the lungs, bronchophony, and cracked pot (*pot felt*) sounds. The transverse diameter of the liver was smaller than in the normal space. The pyloric and right hypogastric regions were tender to pressure, but no nodules or knots could be felt. The pulse was small, 100-120, the temperature regularly rose in the afternoon. The patient lived principally on beef-tea, milk, claret, and water. A month later the author, on examining the motions of the patient, discovered in them large quantities of a whitish fat-like substance. The patient died soon afterwards in the author's absence, so that he was not able

to verify his diagnosis of multiple tuberculosis. The fatty masses which the author had collected from the motions of the patient were of different sizes, varying from a French bean to a walnut, either round or spindle-shaped, and white both on the in- and outside. They floated on water and crumbled when boiled. If, after having been previously dried for some days, they were heated on a plate of glass, a large quantity of fat escaped, which soon grew solid; the residuum was a brownish granular substance, which burned to a cinder after the fat had been melted out, and smelt strongly of melted butter. Under the microscope, and when treated with cold solutions of caustic potash or ether, peculiar formations could be detected, which Funke has called sebaic acid. The question is, Where did the fat come from in this patient, who lived principally on milk? And how was it that she did not lose more flesh and present a more emaciated appearance after this enormous loss of fat? May it not be supposed that in this case tuberculous degeneration, having spread to the organs whose principal function is the digestion of fat, viz., the liver and pancreas, greatly impaired these functions, and that the milk, *sit venia verbo*, having been churned in the stomach and intestines, left the latter in the form of butter?—*London Med. Record*, May 15, 1879.

Histology of Acute Nephritis.

DR. THADAEUS BROWICZ, of Cracow (*Centralblatt für d. Med. Wissenschaft*, March 1st) has induced nephritis by subcutaneous injections of cantharidin in rabbits, in order to determine the changes in respect to the question in dispute as to the primary seat of the lesions. He found the kidneys large and swollen, with their cortical substance stained a deep brown-red, in some places passing into a paler or yellowish colour. The histological changes were restricted to the secreting part of the organs, the labyrinth. The vascular tufts were at first swollen; later on, there was to be seen a layer of hyaline or finely granular material between the tuft and the capsule, which compressed the tuft and stretched the capsular wall. There was no nuclear proliferation to be seen in this. The same material was found in the uriniferous tubes in the shape of tube casts. This finely granular (paraglobulin?) substance, on closer examination, was found to be composed of oval short corpuscles, which cleared and partly disappeared with acetic acid. The epithelium of the narrow urinary tubules was swollen and cloudy, even so as to occlude them. Inside the epithelial layer there were in many places round cells, which resembled in appearance, size, and staining relations those of the interstitial intertubular tissue, and in the absence of any appearance of proliferation of the epithelium were probably wandering cells. The interstitial tissue showed only a small number of colourless corpuscles, which were collected together in little groups. In the straight tubules, besides cloudiness and loosening of the epithelium, there was no change. He concludes, therefore, that the parenchymatous nephritis, described by Virchow, is not secondary and necrotic, as Kelsch thinks, but the consequence of the exudation into the urinary tubules; and interstitial nephritis, the later stage of which is so often found post-mortem, is a distinct process, an analogy being found in the superficial inflammatory affections of the lungs, in which the connective tissue often takes part.—*London Med. Record*, May 15, 1879.

Scleroderma.

At the meeting of the Société Médicale of the Hospitals of Paris on the 13th December, reported in the *Progrès Medical*, 15th March, 1879, M. BLACHEZ presented a patient 34 years old, suffering from scleroderma. After having experienced a feeling of numbness in the hands and nervous disorder for two or

three months, he found himself suffering from growing puffiness of the hands and feet. This œdema, temporary at first, soon became permanent, and lasted from four to six months. Then only did the hardening of the skin begin, which manifested itself especially in the hands and feet, then in the legs, the belly, and, later, the face. No trouble showed itself of sensation or of motility. During the last fifteen days only some pigmentary spots had appeared on the hands; meantime, the health remained excellent. To sum up, this man had passed through three distinct phases—first, nerve disorder and numbness; second, a period of œdema and effusions; third, a period of localized induration. Dr. Blachez had employed friction with iodine ineffectually during the first period. He had not used electricity, which had been recommended in certain forms of scleroderma by Dr. Armaingaud. M. Vidal had observed similar phases in persons affected by scleroderma, but the œdema was not a constant phenomenon. Electricity had not given him any good results. Warm douches to the spinal column had appeared to succeed. His treatment was in favour of the opinion which considered scleroderma as a disorder of the nutrition of the nerves. Dr. Blachez had not found any painful point about the spine in his patient. There was no asphyxia of the extremities. The local temperature had not been examined.—*London Med. Record*, May 15, 1879.

Surgery.

Antiseptic Surgery in Paris.

The Society of Surgery has, during several of its last sittings, been occupied with a long debate on antiseptic dressings, in the course of which it has become apparent that the antiseptic system of surgery has established itself triumphantly in Paris, and is indeed in a fair way completely to revolutionize the results hitherto obtained in those hospitals which have for many years been so notoriously bad as to have become a by-word in Europe. The parable has been taken up in succession by M. Farabœuf, Lucas-Championnière, Panas, and others, and with certainly a crushing result. M. Lucas-Championnière deserves not only the credit of being one of the first of French surgeons thoroughly to study and carefully to appreciate the whole meaning of the theory of antiseptic surgery as well as the practice of it by Mr. Lister. By his writings, and still more by his example in the various surgical services in Paris of which he has from time to time had charge, he has succeeded in demonstrating so completely that results as excellent and as free from mortality may be obtained in French wards as in any others, that it is clearly impossible for French surgeons to hold out much longer against a demonstration so striking. Indeed, the battle may be said, after reading this discussion, to have been already won. The brilliant and striking speech of M. Farabœuf sufficiently shows that among the younger generation of surgeons not only are the Listerian methods fully appreciated, but the principle on which they are based is perfectly apprehended and will not be dropped.

M. Farabœuf was justly merry over the numerous combinations under which the Listerian method is, in England and elsewhere, concealed, parodied, or modified; and in all the debate there is nothing which seems to have been more warmly approved or more thoroughly felt than his powerful statement. But perhaps the most satisfying, because the fullest of facts, is the short speech of M. Panas, towards the close of the discussion, at the meeting on April 2d. This

highly distinguished surgeon and recently appointed professor of the faculty said frankly :

"I am one of those who, for the last two years, have very carefully carried out antiseptic surgery. For twenty-five years I have acted as hospital surgeon, and I have employed various dressings. I can, then, compare myself with myself, and my former results with those of to-day. I present to you first a patient who has had his knee laid open by me for a chronic hydrarthrosis of a year's date. This hydrarthrosis had a traumatic cause. There were, therefore, inflammation and fever. It was under these conditions that I opened the joint. I made an incision of six *centimètres*. A yellow fluid mucous with fibrinous flakes flowed out. The synovial membranes were of the thinness of the thumb; there were enormous synovial fringes. The patient was carried back to his bed, and had his limb placed upon a cushion without being immobilized. The cure was complete at the end of six weeks. The synovial membrane has recovered all its physiological suppleness; there is no stiffness. The patient has resumed throughout the year a very hard service on the railway. Except for the cicatrix, this knee is absolutely like the other. This is the fourth knee-joint opened in my wards; the others were opened by M. Lucas-Championnière, one, among others, in a patient whose leg another surgeon wished to amputate. This series of cases shows that the surgery which we now carry out differs from the surgery which we carried out before. I have seen the knee-joint opened under this method for foreign bodies for suppurating arthritis with caries, fever, etc.; so that this operation, which was formerly contraindicated, is now permissible on condition of employing the dressing of Lister. He who would do it by any other method at present, would deserve to incur police penalties (*serait peut-être passible de la police correctionnelle*").

Notified by the President at this time that so absolute a statement was hardly permissible at a society from which it might go out with considerable notoriety, and might lead to unpleasant consequences to a surgeon who should open a knee-joint under other conditions, M. Panas observed that, of course, that was not his intention; but he wished to point out that with the Lister dressing an articulation might be opened with great safety, whilst in other less perfect dressings it was a great imprudence. He continued :

"I pass to the amputations of the breast. I have performed fourteen amputations, all treated antiseptically (*avec la Lister*). I do not include an old woman of eighty-two, upon whom I was forced to operate, and who died on the fourth day of senile exhaustion. The fourteen others have all recovered. There are patients who recovered in eleven days; others in twelve days; the average was twenty-four days. Whenever I have employed other methods, the patients left the hospital after an average of six weeks. The duration of treatment is, therefore, reduced by half. Another important result is the absolute disappearance of erysipelas from my wards. At St. Antoine, when I commenced my surgical practice in charge of the wards, out of every three patients with amputation of the breast, I had two cases of erysipelas. The scourge of the wards of Nélaton at the Clinical Hospital, and of Velpeau at the Charity, was erysipelas. Of my fourteen cases of amputation of the breast, thirteen recovered without any application. In the fourteenth woman, there was a slight erysipelatoid tendency; but it was at the Lariboisière where all the medical and surgical wards in the hospital were full of erysipelas. During these two years, I have not had in my wards any case of purulent infection. I have operated in very serious cases of strangulated hernia; my patients have recovered without any application. In fourteen operations, I had two deaths; but in one case of crural hernia the woman was already moribund and cold. I had to make her an artificial anus, and she died

without reacting. Another patient died of tetanus after he was cured of his operation. In another patient, when I had operated, a flood of fecal matter made its exit. The intestine was perforated. Nevertheless, the man recovered. As to vertebral abscesses (*abcès froid*), they had come to be considered as things not to be touched. I had been in the habit of recommending my pupils not to touch these abscesses, by reason of the danger which the operation offered, and also because sometimes such abscesses healed if left alone. The method of successive subcutaneous punctures led to grave accidents and caused fistulæ. It was the same with capillary aspiration. I had arrived at a sort of surgical nihilism. It was then that I began to employ Lister's dressing. The simple uncomplicated progress of abscesses thus operated on and thus dressed is what has struck me the most. In the great amputations, it is certain that the mortality has fallen since the employment of antiseptic methods. M. A. Guérin is one of our most skilful operators. During the war, at the Hôpital St. Martin, before the invention of the cotton-wool dressing, M. Guérin had as many deaths as operations. Two months later, at the Hôpital St. Louis, during the Commune, on patients much more exhausted, but with the cotton-wool dressing, M. Guérin had excellent results. If we, who have seen various dressings and various surgical methods, have arrived at giving a large preference to the antiseptic dressings, and in particular to Lister's dressing, much more ought this dressing to be accepted from the outset by the younger generation. The modifications which people have endeavoured to impose on Lister's dressing have not up to this time been happy. Thus Callender contents himself with carefully washing the limb with carbolic acid before opening the psoas abscesses; and then, after the incision, he washes the depths of the cavity with a strong solution of carbolic acid. He covers the wound with lint dipped in carbolized oil, without employing the other parts of Lister's dressing. I have tried this dressing once this year in my service in a patient having a psoas abscess. The results have not been good, and I have returned to Lister. I never washed out the wound with so-called pure water, as that water always contains vibriones. For the washing and dressing of eyes on which I operated, I employed a one-per-cent. solution of boracic acid."

Those who know the intelligence, skill, and erudition of M. Panas, and who have had an opportunity, as we have had, of visiting his wards at a date prior to the commencement of the antiseptic dressings, and at a time when M. Lucas-Championnière was first introducing the method into the wards by the example of a few cases so treated, will appreciate the frank, courageous, and outspoken declaration of M. Panas, and the effect which such a statement, so conclusive in itself and so effectually made, cannot fail to produce upon all his colleagues in the hospitals. He is known to be a surgeon of great skill, of excellent ability, and large information; and the emphatic indorsement which he has given to the completely revolutionizing results of the introduction of antiseptic methods is unanswerable. It reads, on a small scale, like the now historical statements of Nussbaum of Munich and Volkmann of Halle, which made the Listerian method universal throughout Germany. The results in English hospital wards can, of course, never present the same striking contrasts; for the observance of a religious cleanliness and of a quasi-scientific isolation of each individual case has now for the last quarter of a century given results so good in our English hospitals after surgical operation, that the perfection of antiseptic methods cannot affect statistics in the same violently demonstrative manner as it affects the surgical statistics of France and of Germany, where the results of operation had for the last twenty years presented a lamentable contrast to those to which we have been accustomed in our hospitals. Indeed, it is curious, and to an English reader hardly credible, that, even in the course of this discussion, there still linger the

old remains of disputes as to whether union by primary intention can be attained sufficiently often after amputation to make it justifiable to make that the customary object of all dressings after such operations. Nevertheless, the prevalent custom now making its way in most of our hospitals—nearly all performing under the Listerian precautions certain operations which are beset by particular danger—is of itself a practical tribute hardly less striking than that which M. Panas pays to the value of the antiseptic method. M. Panas said, by a sort of slip of the tongue which he hastened to correct, that to lay open freely a knee-joint in a case of hydrarthrosis or foreign body otherwise than under antiseptic precautions might almost be considered to call for judicial interference. That was, of course, an oratorical exaggeration, which he immediately withdrew. But it is probable that there are few surgeons at the present moment who would not accept the proposition that to do so would be to inflict upon the patient an immense additional risk, and upon a surgeon, in consequence, an additional anxiety of which few would be willing to take the responsibility; and the dressings of Mr. Lister in London, and the remarkable examples which his wards have afforded of the almost incredible immunity with which all the joints, and the pleural cavity itself, may be opened under an antiseptic spray and with antiseptic precautions, have so profoundly impressed the greater number of metropolitan surgeons, that during the last two or three years antiseptic surgery by the Listerian method may be said to have established itself in London as the ultimate resource when it is necessary to perform hazardous operations upon serous cavities, or upon deeply seated parts which till lately would have been considered beyond the reach of the surgeon's knife.—*British Med. Journal*, May 10, 1879.

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Trephining for Epilepsy Depending upon Injuries of the Skull.

The statistics of Stephen Smith (*New York Journal of Medicine*, March, 1852), comprising 27 cases; of J. S. Billings (*Cincinnati Lancet*, June, 1861), 72 cases; and, finally, the table of 12 cases operated upon and published by Dr. S. Bontil (*Boston Med. and Surg. Journal*, vol. x., 1872), give irrefragable proofs of the utility of trephining in epilepsy produced by injury of the cranium. Russel (*Brit. Med. Journal*, 1865) collected 78 cases, but without giving the names of the operators, or the bibliographic source. ECHEVERRIA in this communication (*Archives Générales de Médecine*, Dec. 1878) also cites the statistics of Billings, and gives the opinion of Cooper and Copeland as in favour of the trephine, fortified, in their opinion, by the success of Dudley, Guild, and other surgeons. Velpeau did not approve of the operation, except when there existed an œdematous and crepitant cicatrix; Syme and Solly felt the gravity of the operation, but the former thought it well to operate where an open wound communicated with the fractured cranium.

Since that time, the improvements which have been made in the instrument used, and the recent discoveries in cerebral localization, with the success obtained by Broca, Bœckel, Lucas, Championnière, Marraud, Proust, and Terrillon, would seem to indicate that a reaction has set in against the doctrines hostile to the operation.

Dr. Echeverria then gives a table of 145 epileptics who were trephined, the name of the operator, the result of the operation, and the bibliographical source. The results may be briefly given as follows: 93 cures; 18 improvements, 5 in which there was no change, and one where the symptoms were aggravated; the deaths 28; total 145 epileptics, of whom 6 were females, 3 children from seven months to 12 and 13 years, 17 youths, and the remainder adults. Primitive pericranial lesions existed in 32 of these 145 cases.

As to cranial injuries, several reports only indicate the fracture without naming

the site. There were, however, specified 15 fractures of the frontal, 11 frontoparietal, 3 of the temporal, and 6 of the occipital bone; the remaining 26 observations do not state the bone injured. It is worthy of note that the left parietal bone has been most frequently the seat of fracture. The various kinds of fracture in the 113 cases corresponding to the cranial lesion were 16 cases of simple depressions of bone; 13 by firearms, in one of which the projectile remained in the wound seven years; 81 comminuted and complicated; 34 simple fractures; 3 multiple; 5 with external fistulous openings; 1 fracture of the parietal, with traumatic aneurism of the middle meningeal artery; and, lastly, 2 cases in which the fracture was complicated by protrusion of brain matter.

The difference in the mortality between the early and the late operations is not remarkable; 9 deaths occurred amongst 17 of the former, and 25 among 138 of the latter, being a mortality of 17 per cent. for the early and 18 for the late operations. The causes of death amongst the 28 fatal cases were of a very diverse nature.

Suppuration upon the whole surface of the brain; great effusion of blood in the brain under the seat of the operation; gangrene of the membranes and abscess of the brain; hemorrhagic openings into the longitudinal sinus; abscess of the brain in one case, and gangrene after meningitis in another; meningitis and erysipelas; encephalitis by loss of cerebral substance; in the other operated cases death followed a meningitic encephalitis, the immediate consequence of the operation.

Death took place on the 17th day after the operation in the patients of Bell and Heywood; of Bylon's cases, one with abscess of the brain died on the 39th day, the other the 3d day. Warren's patient had continual hemorrhages from the longitudinal sinus during the nine last days; in Adams's patient the fatal symptoms developed themselves on the 14th day in the temporal region. The patients of Gross and Gilmore succumbed rapidly, and the cases of meningo-encephalitis were not less rapid in their course.

In 1864, Henri Charbon repeated the operation 27 times upon the Count Phillip of Nassau, and the result was cure. This number was, however, surpassed by Mehée de la Touche, who, in the space of fifteen months, made 52 applications of the trephine, of which 27 penetrated to the dura mater. Saviard trephined a patient 20 times; Gooch 13 times; Desportes 12; and, finally, at an earlier epoch, Russ and Legendre, surgeons of the King of Navarre, in 1686 elevated nearly the whole of the two parietals, their patient living thirty years, although hemiplegic; results which seem to protest against those who reject the operation on account of its extreme gravity.

The five cases in which no change took place after the operation hardly protest against the very numerous facts which prove that, as a rule, the benefit obtained by the operation in cases of epilepsy due to traumatism, is immediate and permanent. Traumatism followed by functional troubles indicates sufficiently the treatment by the trephine. And it may be affirmed, on the strength of a long experience, that no epilepsy caused by traumatic lesion of the cranium is ever cured by time. A disease which, apart from its own peculiar dangers, exposes its victim to so many and various accidents, demands that the trepan be employed without hesitation or useless delays, except when fever occurs, immediately on the accident. On the other hand, we may remember that, as a rule, epileptics are exempt from disturbances following the most grave wounds, and also the rapidity with which their wounds cicatrize, circumstances which diminish the risks not only of the trepan in cases of long standing, but also of all surgical operations practised upon epileptics. Except in very well-defined cases of immediate epilepsy, with fever and traumatic meningo-encephalitis, there should

be no hesitation in operating each time that the symptoms indicate it. Large portions of bone may be removed, if necessary, and the practice of the American surgeons is not to close the wound until all bleeding has ceased, when it will do well without antiseptic treatment. Galt's instrument is the safest, as it is not liable to wound the dura mater, and is so contrived that when the bone is cut through, the instrument will not cut further.

The principal accidents following the operation in the cases collected above may be shortly named. Five times there were intra-cranial hemorrhages; in one there occurred a traumatic aneurism of the middle meningeal artery, which was quickly arrested by the cautery. In one case there was hemorrhage from a branch of the middle meningeal, which ceased spontaneously. Croft's patient had large clots between the dura mater and the brain, caused by the rupture of a meningeal vessel, wounded by the fractured bone, and there occurred during the operation bleeding from two small arteries of the scalp. Warren's patient had hemorrhage from the longitudinal sinus during the last nine days. In one of Gross's cases there was a large collection of blood from the rupture of a diseased vessel near an exostosis on the internal face of the depressed bone. In one of Dudley's and two of Gilmore's cases there was loss of cerebral substance consecutive to the traumatism. The first ended happily, the other two fatally. The patients of Broca and Bœckel, who had hernia cerebri, recovered, in spite of the very serious conditions under which they were trephined. We may conclude that the trepan is the best means for the cure of accidental epilepsy consecutive to traumatisms of the cranium; that the immediate operation succeeds hardly to the same degree as the late, fever in either case being a serious contraindication to the trepan. Insanity and paralysis are the complications which justify rather than contraindicate the trephining of the cranium in epilepsy produced by traumatic lesions of the head. The operation succeeds equally when syphilitic products in the cranial bones resist specific treatment, or in other cases where they cause epilepsy or serious cerebral attacks.

The statistics of a considerable series of operations show that the mortality of the operation for accidental epilepsy by wound of the head, without taking account of the time of the operation, is 19.30 per cent., the cures 64.13 per cent., the improvements 12.41 per cent., and the cases in which the epileptic attacks have not changed 3.44 per cent.

It is of the first importance for the success of the operation to protect the membranes as far as possible, and to avoid their violent reaction against the slightest injury or foreign body. It is not less necessary to employ the silver suture, and not to unite the edges of the wound until all bleeding has ceased, and, lastly, to prevent suppuration and infiltration of the pericranium and of the brain. There must be no hesitation to promptly clear and set free all pus from the wound. The constant application of ice to the wound, the internal administration of ergot and hemlock (prepared from green fruit), the free action of the bowels by terebinth enemata, with a moderate diet, and especially the placing of the patient in a large area, are the main conditions for obtaining rapid cicatrization of the wound.

It is also prudent to guard the patient, for some time after the operation, under the influence of anti-epileptic treatment, in order to destroy all remains of habit in the nervous system, a tenacious element in epilepsy.—*London Med. Record*, May 15, 1879.

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Case of Wryneck successfully treated by Division of the Spinal Accessory Nerve, after Failure of Stretching.

The following interesting case occurred under the care of Professor ANNANDALE at the Royal Infirmary, Edinburgh.

A young woman, aged twenty-four, was admitted into the surgical wards on February 7, 1878. She had passed the three months immediately preceding this date in the medical wards under the care of Professor Grainger Stewart, where trial had been made of all those internal remedies likely to benefit her condition, but without any permanent improvement. The patient was employed in a power-loom factory, where, in order to follow the movements of a shuttle, it was necessary for her to keep continually turning her head from side to side, and as the handle of the machine at which she worked was at her left side, she had occasion to turn most frequently in that direction. After a spell of unusually hard work the patient began to experience a constant sensation of discomfort and uneasiness in the neck, accompanied by occasional twitching movements. The head seemed to be drawn somewhat towards the left side, and on moving it the patient found that additional effort was required to subdue the jerking movements, which tended to return it to its former position. The rotation of the head towards the left soon became more marked, and the spasmodic movements increased in violence and frequency.

On admission it was observed that, while at rest, the head assumed the position of rotation to the left, and was depressed towards the left shoulder, which was elevated to meet it. She was generally to be seen sitting with her chin supported on her left hand, looking over her left shoulder. Any movement of the head from this position at once excited the spasmodic movements. These consisted in a series of jerks, becoming more violent as they lasted, by which the head was brought round to the left from any position of rotation towards the right. Though much relief was obtained by avoiding bodily or mental effort, yet it was only during sleep that complete quiet was obtained.

The difficulty of determining the muscles primarily affected was unusually great, yet by observing during the attack the superficial muscles thrown into contraction, the position assumed by the head, and the situation to which the pain was referred, it seemed probable that the following were the groups of muscles chiefly involved: First, the left obliquus inferior, rectus capitis posticus major, and splenius, which rotate the head towards the left; and, secondly, the left sterno-mastoid and trapezius, which depress the head towards the left shoulder and rotate it to the right. The clonic spasms appeared to be due to the alternating action of these two groups of muscles. The case seemed to be one in which overwork had induced a state of, as had been designated by Dr. Poore, "chronic fatigue or irritable weakness" in at least two opposing groups of muscles, those most used by the patient, as a result of which they had become liable to spasmodic action. The most certain means of inducing the clonic spasms was any attempt to perform the habitual movement—in other words, to use either group of affected muscles.

The explanation of the other marked feature of the disease—the permanent deformity—follows from this; it was assumed because by it the greatest possible amount of relaxation of both groups of muscles at one time was obtained: the rotation of the head to the left relaxed the first, and the approximation of the head to the shoulder the second group. The adoption of this position was an attempt to abstain from using either group of muscles, and so to avoid the action of the most powerful cause of the spasms.

All this naturally indicated the necessity for more complete rest, such as might be obtained by paralyzing one group of muscles. In order to effect this the following operation was performed: On February 10th Professor Annandale made an incision from below the tip of the mastoid process on the left side, extending downwards for about three inches along the anterior border of the sterno-mastoid muscle. The border of the muscle was cleared, and some of its fibres

divided transversely and turned aside. The left spinal accessory nerve was exposed and stretched, and, in case section of it should afterwards be deemed advisable, a silk ligature was applied loosely round it. The wound was then closed, the ends of the ligature being brought out at its lower angle.

No beneficial change whatever followed this procedure; accordingly, on the following day, Professor Annandale removed the stitches from the wound, and by means of the silk ligature brought the nerve within reach, *divided* it, and after separating the divided ends, removed the ligature, and closed the wound. A few hours after section of the nerve had been accomplished, when the patient was able to sit up, it was found that she could move her head slowly round to the right, and could keep her face looking steadily forwards. During the healing of the wound she continued to acquire steadiness and freedom of movement of the head up to the time of her dismissal, on the 16th of March.

The patient was seen in March, 1879, a year after the operation, when she was found to be free from any symptoms of the disease from which she had formerly suffered. The sterno-mastoid and trapezius muscles on the left side were then as well developed as on the right, and the appearance and movements of the neck and shoulders were absolutely normal. In the interval she had resumed her employment, and had only left it on account of her marriage—a circumstance in her social history which testifies to the completeness of the cure.

Three other cases of section of the spinal accessory nerve for spasmodic wry-neck are recorded. One of these is the case of Mr. Rivington, of which no particulars have been published.¹ The others, performed by Mr. De Morgan, seem to support the explanation which has been offered of the present case. One was identical with the case now described, but on the opposite side. In it the right spinal accessory nerve was divided with a successful result.² In the other the head was rotated to the right also; here the left spinal accessory nerve was divided without curing the disease.³—*Lancet*, April 19, 1879.

Luxation of the Left Arytenoid Cartilage.

STOERK brings forward (*Wiener Med. Wochenschrift*, No. 50, 1878) two cases of a most interesting affection, viz., of luxation of an arytenoid cartilage. In both cases there was falsetto voice from early childhood. In one case, the etiology was most likely to be found in cicatricial contraction after diphtheria; in the other no cause at all could be detected. There was in both cases immense tumefaction of the left arytenoid cartilage, which attained in one case three, in the other four times its natural size. In the first case, occurring in a gentleman aged 33, the immobile thickened left cartilage, which was turned in a transverse direction, filled nearly completely the upper aperture of the larynx; its healthy fellow was rendered immobile, too, in consequence of its being pushed backwards by the tumefied neighbour; and thus the vocal cords were permanently in a state of passive tension corresponding to that of the highest falsetto. This gave a simple explanation for the symptom at once attracting attention, viz., for the patient's permanent falsetto voice. Each simple catarrhal inflammation of the narrowed air-passages proved nearly fatal to the patient, bringing on attacks of suffocation. Thus Stoerk resolved in 1868 to relieve this state of things by producing a loss of substance on the posterior and external part of the mucous membrane of the tumefied left arytenoid cartilage, in the hope that the cicatricial contraction would produce a better position. This result was obtained, and the

¹ British Medical Journal, February, 8, 1879.

² British and Foreign Medico-Chirurgical Review, July, 1866.

³ The Lancet, August 3, 1867.

respiration became easier for a short time. Soon, however, the old state of things returned. The operation was again performed a few years later, with the same temporary success. In 1874, the patient went to Schroetter to try his method of gradual dilatation by catheterism of the larynx. Stoerk candidly admits, that this method was accompanied not only by subjective relief, but by an actual dilatation of the upper aperture of the larynx. This fact was ascertained by Stoerk himself, the patient presenting himself repeatedly at his house whilst he was under Schroetter's treatment. In 1876, the patient died suddenly, cause of death unknown.

The second case, also occurring in a strong and healthy man, was very much like the first with regard to the symptoms of phonation and respiration. Here, however, the entire larynx could be seen, the vocal cords remaining close to each other even during deepest inspiration, as in cases of paralysis of the posterior crico-arytenoid muscles. The epiglottis stood quite straight, the right arytenoid cartilage was pushed outwards and backwards by its tumefied left neighbour, the processus vocalis of which occupied the place where the centre of the right ought to have been. In this case, also, catheterism was tried for two years, but without the slightest result.—*London Med. Record*, May 15, 1879.

Treatment of Impermeable Stricture of the Urethra.

At a late meeting of the Clinical Society of London (*Lancet*, May 10, 1879), Mr. HULKE read notes of a case of Retention of Urine, caused by Impermeable Urethral Stricture, treated by tapping the bladder above the pubes, and later by external section of the stricture, a catheter passed through the bladder and a staff per penem, as far as the obstruction, being used as guides. The patient, 40 years of age, was admitted into the Middlesex Hospital on November 29th, with retention of twelve hours' standing, the bladder being distended to the umbilicus. He had been treated for stricture twelve years previously. It being found impossible to pass a catheter, Mr. Hulke emptied the bladder by aspiration above the pubes. Twenty-seven hours later, no urine having been passed, a trocar was passed into the bladder above the pubes, and a canula left *in situ*; and on the third day this was substituted for a gum-elastic catheter. During the next few weeks the patient had two attacks of pleurisy. Several unsuccessful attempts were made to pass a catheter per penem, and on January 3d, Mr. Hulke divided the stricture from the perineum, a staff passed through urethra up to the stricture, and a catheter through the prostatic urethra from the bladder down to it being used as guides. The tough fibrous tissue was divided, and the catheter being withdrawn, the staff was guided into the bladder, and, lastly, another catheter passed over the staff into the viscus. The suprapubic aperture was allowed to close, and the case did well. Mr. Hulke remarked that the suprapubic tapping was selected in preference to Hunter's and Cock's method, because of the deviation of the urethra to the left. Not that this operation (first suggested by Hunter, and then practised by Dittel) was intended to supersede puncture through the rectum, but that it was suitable for exceptional cases, such as this. It was not more liable to be followed by urinary extravasation, which did not occur in any of Dittel's cases, nor had Mr. Hulke found it to take place; whilst a provincial surgeon had made the same statement, based on an experience of seventeen cases. It admitted further of antiseptic precautions, and had the advantage of allowing the course of the urethra before and behind the stricture to be made out if division from the perineum became necessary. He had some little difficulty in finding the orifice of the prostatic urethra. The suggestion to use a catheter passed through the external wound as a guide to perineal section

is made in a foot note appended to the remarks made by Hunter in the collected edition of his writings.

Mr. MARSH said that in *The Lancet* for 1838, Mr. Hursley records a case of impermeable stricture, where he performed suprapubic tapping, and passing an instrument downwards through the stricture, managed by its means to draw upwards into the bladder a catheter passed per penem. Mr. Hulke's paper was very valuable as affording another means for treating a very difficult class of cases.

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Remarks on the Production of Cystitis by Contagion through the use of Instruments.

Sir HENRY THOMPSON, in a recent communication to the *British Medical Journal* (May 10, 1879), says: I have long suspected that cystitis is capable of being propagated by the direct transference of inflammatory products from the bladder of one patient to that of another. All are sufficiently familiar with the fact that purulent matter from the vagina, and probably from the uterus also, produces inflammation of the male urethra, and that conjunctivitis may be caused by contact with pus from either source; and I believe it is quite unnecessary to imagine that any specific quality attaches to purulent matter produced in these localities, rendering it more than ordinarily virulent and contagious. Certainly no proof can be adduced that such quality exists; a decision on this point, however, does not necessarily affect the question whether cystitis may be originated or not by contagion.

Every one knows that the operation of sounding the bladder—it may be for stone or for tumour, etc.—is sometimes, although rarely, followed by an attack of inflammation more or less severe. Such an occurrence is, in some circumstances, not unnatural. A delicate organ is mechanically disturbed, and, if force be employed in the process, some inflammation of the mucous membrane is a not improbable result. Hence the extreme importance of adopting a method and instruments which shall accomplish the object in view with the smallest degree of distension and movement; and also of forbearing to make such an exploration, except in circumstances which manifestly indicate its necessity. In my experience of such cases of this kind as have fallen under my observation during many years, I have remarked that the inflammatory attacks which follow sounding occur in two modes, distinct from each other. Thus, in some instances, the patient has a shiver, occurring within three to four hours of the time of the examination; soon afterwards, the urine is passed too frequently and with pain, becomes cloudy, and some general fever sets in. In such, the cause of inflammation is clearly a mechanical one, and, if the patient be healthy, it soon subsides with rest and treatment. But, in a few other instances, no disturbance occurs until the lapse of forty to fifty hours, or thereabout, after the sounding. The subject of the examination has been in all respects well since the sounding took place, and felt, if anything, only slight soreness during the first few hours following the operation. After the interval named, he experiences a little undue frequency of micturition, loses appetite, is chilly or has a shiver; and by degrees symptoms of cystitis appear, and continue a marked course for a few days, with varying persistence according to circumstances. Usually, the patient attributes his condition "to some cold he must have caught the day after the examination," and by no means attributes his troubles to the instrument, as he infallibly does in the circumstances first described.

Why, in certain circumstances, these phenomena should occur so long after the provocation which must have given rise to them, has, as I have already intimated, frequently afforded me an interesting subject of speculation. But a case

has recently occurred, which I have been enabled to watch closely, and which seems to throw light on the nature of these examples of the second kind. I shall give the chief particulars in detail.

A medical man, under sixty years of age, having had occasion, as he thought, to pass for himself a silver catheter (No. 10) daily, had a new one made; there was a peculiarity in its construction, the lower or curved portion, about two inches and a half in length, being separate and attached by a screw to the shaft. Such catheters were frequently made formerly for the purpose of packing in a surgical pocket-case. He passed this daily with great ease during some weeks, on no occasion producing irritation. One day, and this was the only occasion on which he used the catheter for another person, he introduced it into the bladder of a patient whose urine was highly muco-purulent, and who was indeed suffering with severe cystitis. He believes that, immediately after using the catheter, he washed it in the ordinary way. Subsequently, on that day, he employed it as usual for himself; and it is somewhat curious that he did not use it the next day—not because he felt any irritation, but, on the contrary, because he was arriving at the conclusion that the instrument was no longer necessary. The next day but one after his last employment of the catheter, about forty-four hours after, he felt chilly, and micturition was slightly painful. Next day he had some fever, no rigor, but increase of temperature; his urine was cloudy and passed frequently. The day after, he was confined to bed; the temperature varied between 102° and 103° for a few days, and the urine was loaded with muco-purulent jelly-like deposit during one or two days. After more than a week's confinement to his room, he gradually improved and soon perfectly recovered, having in his urine now no trace of the attack; he empties his bladder perfectly, and, in relation to the urinary system, has nothing whatever to complain of.

The circumstances of this case will go far, I think, to suggest the strong probability that this attack of cystitis was caused by the transference of infectious matter, by means of the catheter, from the patient for whom it was once used to the subject of our case. I can scarcely doubt that the exceptional formation of the instrument, the screw-attachments which on examination, moreover, appeared to be a little loose, offered a chink, in which matter lodged, especially as this lower part was not detached for cleaning—the eyes of the catheter serving that purpose, as in the ordinary instrument.

It may very naturally be urged: if inflammation be so easily produced through contagion by passing instruments not scrupulously rendered clean, so numerous and varied as these are, and so frequently used, how is it that cystitis is not a very frequent result—for this it certainly is not—of ordinary catheterism?

I think the reason is not far distant, and that it may be found in the action of the catheter itself. The moment the instrument reaches the bladder, the urine rushes through the orifice, and carries off in its current any minute particles which may be adherent to its extremity. In bougies, no opening for the lodgment of adventitious matters exists, and any risk of contagion by their use must be considerably less. Besides, the action of the urethra itself, clinging to the instrument and sweeping off, almost at the external meatus, as it does by that action, most of the lubricating material, is a sort of defence to the internal passages from danger. On the other hand, in examining a bladder, the sound is rarely used as a catheter, and although it has often an eye in its extremity, the handle is closed, and urine seldom passes through it. The various movements of a sound in searching the bladder are calculated to detach, within its cavity, foreign particles, if any such exist, in or about the eye.

The practical question, how to prevent any transference of matter to the bladder and urethra, in employing instruments of any and every kind, presses for solu-

tion. It is one of extreme importance to all concerned, and the occurrence of an accident of the kind described, however rare it may be, is one the bare possibility of which cannot be contemplated without extreme repugnance.

After some consideration and some experimental trials, I think the following recommendations will render contagion by instruments impossible.

Firstly: All metal instruments—catheters, sounds, and lithotrites—after use, at any rate in cases of muco-purulent urine, should be plunged for a minute or two into boiling water, to which either a little common soda or a little carbolic acid has been added. If the boiling point of water be not considered absolutely sufficient, a strong solution of chloride of zinc in water may be used. At the strength of twelve per cent. solution, the boiling point is 220° Fahr., or eight above that of boiling water. For some years past, as advised in the last edition of my lectures, I have always placed all gum and other catheters and bougies in a bath of weak carbolic acid immediately after use.

Secondly: I have more recently—that is, since the occurrence described—added a solution of carbolic acid to the oil used for the lubrication of instruments. Oil being the remedial agent for the caustic effects of carbolic acid, there is no danger in applying to the urethra a comparatively strong solution of the acid in oil, since no irritating effect whatever is produced, and the disinfectant influence is unimpaired.

For the last two months, I have used the following formula, and can, therefore, guarantee that it is absolutely unirritating: *R* Acidi carbolici med. gr. xii; olei olivæ 3i.

A free use of this as a lubricant to all instruments before using will, I believe, insure, at all events in combination with the modes of cleaning just described, safety from the occurrence of any contagion by means of instrumental treatment.

Lithotomy by a Single Operation.

Dr. HENRY J. BIGELOW, in a recent communication to the *Lancet* (May 17, 1879), says that his method is now no novelty in America, and adds the few following recent examples of his operation which was named litholapaxy.

An operation which I performed January 26th, in the case of a medical gentleman, aged sixty-seven years, lasted fifty minutes, and consisted of two crushings, occupying fifteen minutes; three evacuations of fragments, nine minutes; changes and other delay, twenty-six minutes. Two hundred and sixty grains of phosphatic stone were thus removed. The patient had no trouble from the operation, and on the thirteenth day went home to the country well. There were no fragments left in the bladder.

In another case (February 10th), that of a man aged fifty years, one diameter of the stone measured $1\frac{1}{2}$ inches. The operation lasted one hour and twenty-one minutes. The crushings occupied twenty minutes, the evacuation of fragments thirty, while the changes, etc., were recorded at thirty-one minutes. Three hundred and two grains of hard oxalic calculus were crushed and drawn out,—with some delay in the operation, due to fragments lodged behind a high prostate. I was unable to break the stone with Charrière's or rather Collin's instrument. The patient had no unfavourable symptoms, hardly a trace of blood, and no fragments were left.

This case, which involves, so far as I know, the largest hard stone yet evacuated at one sitting, is an example of what can be done by the new process. In evacuating such stones, it need only be said that, the smaller the tube the more minutely must the fragments be broken, and the greater will be the liability to obstruction. Small stones, common in these later days of lithotomy, especially soft ones, are

not unfrequently crushed at one sitting, by any lithotrite, without ether, and if reduced to sand, may really need no tube to evacuate them.

The following case is as good a test of the new operation as I could wish. The patient, aged thirty-three, entered the hospital October 31st, about four months and a half ago. His condition was so bad that it was thought inadvisable to attempt any operation, even lithotomy. The urine was ammoniacal and fetid, always containing a large quantity of blood, also pus and mucus to the amount sometimes of nearly one-half by measurement. Micturition was very frequent, occurring at intervals of from ten minutes to half an hour, day and night, during much of this time. The straining was excessive, ineffectual, and productive of great suffering. Three unsuccessful attempts having been made on previous days, a sound was first introduced into the bladder, under ether, November 10th. The next day the temperature rose to 103° , and remained thereabouts till the fourth day, when another complication presented itself. The left knee became suddenly inflamed and swollen. It has remained so ever since. During the next two months the temperature ranged from 100° to 102° daily—afterwards slowly receding though the other symptoms did not abate. I saw the case, for the first time, March 7th. With so diseased and irritable a bladder, it was evident that litholapaxy could be considered only as an experiment. It was a last resort, being perhaps better than lithotomy. Should it succeed, it would testify strongly in favour of the new method; should it fail, it could hardly be counted against it. On the 9th of March I operated. In the neighbourhood of the triangular ligament an obstruction prevented the passage of sounds larger than a No. 15 French calibre. After snipping the meatus, this obstruction was divulsed by Voilemier's instrument, and it then admitted a full-sized lithotrite, and a straight tube 29 French, for which, later in the operation, 30 was substituted. Two hundred and forty grains of stone were now slowly and carefully removed in sixty-eight minutes. An abundance of flocculent and fibrinous material concealed the fragments when lying in a basin, and testified to the inflammation. At 4 P. M., four hours after the operation, the temperature had fallen from 99° to 96° . In eight hours more, at midnight, it had risen to 103° , with a pulse of 130, where it remained through the day, the tongue being red, smooth, and dry. A general pain in the region of the bladder and urethra required opiates. Yet on the third day the tongue became moist, with a light coat, the temperature had fallen to 99° , and the pulse to 84. This improvement still continues. The patient has had no such comfort for many months. During the first week after the operation, he passed his water six times in twenty-four hours almost without pain, and there has been no tenderness over the bladder. The urine contains very little sediment, and, apart from the knee, which remains as it was, the patient is rapidly convalescing.

My new lithotrite proves to be very efficient, and I am recently indebted to London makers (Weiss and Son) for an instrument that works perfectly. It is of a good size for general use; a smaller one, if preferred, may be used in special cases. The instrument is non-impacting, and keeps clean in the bladder for an indefinite time. Its rounded tip protects the bladder in a protracted operation, as it also does the prostate during introduction. For the old wheel, which hurts the hand in long crushing, the ball is a welcome substitute. And unless the human hand undergoes some modification of what are now its easiest movements, the system of a *right hand lock*, here first employed, must, as I believe, whatever be the size of the lithotrite, supersede in time any previous method of locking.

Prolapsing Internal Hemorrhoids.

Professor GOSSELIN referred in a recent clinical lecture (*Gazette des Hôpitaux*, April 29, 1869) to a case in which internal hemorrhoids only descended during

defecation, sometimes with bleeding, were difficult of reduction, and attended by considerable pain. There being no contraction of the sphincter, forced dilatation was not required, and the chief indication consisted in diminishing the size of the hemorrhoids, a practice that is preferable, when practicable, to their removal by operation, which is attended with considerable danger. When they are diminished in size they either return spontaneously, or are easily returned without pain by the patient. In this case the diminution was brought about by parenchymatous cauterizations made with Paquelin's thermo-cautery. No loss of blood took place; the eschars were soon eliminated, cicatrization promptly followed, and the diminished hemorrhoids were returned with very great facility after stool. The patient has had to take some aperients, especially rhubarb; and before leaving the hospital he was cautioned not to remain too long at stool, which most persons with prolapsing hemorrhoids are very apt to do, when the efforts made render the hemorrhoids larger, increase the hemorrhage, and prolong the malady. He was also cautioned to avoid strong alcoholic drinks, which increase the size and produce congestion of the hemorrhoids. Finally, he was told to avoid constipation, keeping the bowels freely opened either by rhubarb or enemata, so as to avoid expulsive efforts, and large masses of feces which produce irritation and maintain the hemorrhoids. In these cases of internal hemorrhoids the surgeon should content himself with obtaining these three results—that they do not descend during progression, that they do not bleed, and that when they descend at stool they are easily reduced.—*Med. Times and Gazette*, May 10, 1879.

Operation for the Radical Cure of Congenital Inguinal Hernia in the Child.

Dr. GEORGE BUCHANAN, Professor of Clinical Surgery in the University of Glasgow, in a short communication on this subject to the *British Medical Journal* (May 17, 1879), says:—

Prof. John Wood's operation for the radical cure of inguinal hernia in the adult is, on the whole, so successful and so free from danger, that I am surprised so few of the many hundreds affected with hernia in every community seek the relief it affords. I presume it is because there must always be some hesitation in accepting the present risk, however small, which accompanies an operation; and a hope that the much greater danger of strangulation may never occur. But in the case of young boys the risk arising from an operation is much less. I think it has been shown that the peritoneal cavity, especially under antiseptic precautions, may be opened with impunity. But even this risk is, in Mr. Wood's plan, not encountered; and it seems to me strange that boys who have a congenital hernia which cannot be kept permanently reduced by any apparatus—a state of matters which every hospital surgeon sees repeatedly—should be allowed to grow up with a deformity which prevents them from being useful and happy members of society, and debars them from a great many employments.

I confess, however, that I have been disappointed with the results of my attempts to cure congenital hernia in children by Mr. Wood's operation with pins used subcutaneously. Either I did not succeed in pushing them through the anatomical structures I intended, which is so easy to do in the adult with the strong curved needle, or I failed to lock them and twist them, as it is necessary to do; but, from whatever cause, in the two cases on which I operated the result was unsatisfactory. The hernia came down as soon as the pins were taken out.

I determined, therefore, to perform an operation consisting of opening the sac and obliterating the canal by the introduction of strong sutures. The steps followed will be best understood by the report of a case which formed the subject of a clinical lecture.

Robert Inglis, aged sixteen months, was the subject of congenital inguinal hernia, which was observed shortly after his birth. It was small when first noticed, but soon increased in size; and it had grown with his growth. It was on January 9, 1879, about the size of a turkey's egg, and distended the left side of the scrotum. It could be reduced with ease; but it as easily slipped down, and no apparatus or bandage could retain it in its place. Trusses had been tried at various times; but no sooner did the child move than the hernia came down. On returning it into the abdomen, the finger was readily pushed through the inguinal opening; but even then, unless pushed far up, the bowel slipped down alongside of it.

Before performing any operation, I accustomed the little patient to the pressure of a bandage. I returned the bowel, and applied a large thick pad, which was bandaged very firmly with a figure-of-eight bandage round the groin. This retained the hernia in its place for some hours; but the movements of the child and repeated fits of crying brought it down usually within twenty-four hours.

On January 25, 1879, I performed a radical operation as follows. The patient having been put under the influence of chloroform, the rupture was returned and kept up by the finger of an assistant. A longitudinal incision was made along the whole length of the sac, from opposite the internal ring to the bottom of the scrotum. This divided all the textures down to the peritoneal sac, which, as usual, had been thickened by the presence and movements of the hernia. With the handle of the knife and a few touches of its point, I separated the sac from its superficial structures, leaving the posterior part lying over the cord, which was seen behind. I now divided the sac into two halves by a transverse cut, except at the back, where it was adhering to the cord. One half was folded down over the testicle, so as to form a sort of *tunica vaginalis*. The upper half was rolled into a sort of ball or plug, which I pushed into the internal abdominal ring and had it kept there by the assistant. I now approximated the walls of the inguinal canal much in the same way as in the wire-operation for the radical cure of hernia in the adult. The superficial structures having been previously pushed aside and slightly dissected from off the abdominal aponeurosis, the relations of the rings and the canal could be felt and in great part seen. I took a strong *navus*-needle and pushed it through the external pillar of the canal at a spot opposite the internal ring; then, guiding it with the point of my left forefinger lying in the internal ring, I made it lift up the lower border of the internal oblique muscle, and emerge through the internal pillar of the external aponeurosis about half an inch above its lower edge. A strong waxed silk thread was now passed through the hole at the point of the needle, which was then withdrawn, pulling the thread with it. The thread was then tightly tied, including the structures through which the needle had been passed, and so fixing into the internal ring the rolled-up bit of the sac, care being taken that the external raw surface of the sac should be turned outwards toward the integument which was to cover it. A little below the first stitch, a second was introduced in the same direction, care being taken to avoid the structures of the cord, which lay at the bottom of the wound. The edges of the external ring were now drawn together tightly above the cord by a strong silver wire; this was made to take a very strong hold, by passing the needle first through the external pillar, across the ring, and through the internal pillar. In making the internal puncture, I passed the point of the needle so far towards the *linea alba* as to make it pierce from below the tendon of insertion of the rectus muscle, so as to give a firm hold. When the wire was drawn through with the needle, it was clamped, so as to squeeze together the boundaries of the external ring; and it was retained in that position by a little rod of silver with a hole at its point, through which the two ends of the wire were

passed; and, having been drawn tight, they were fixed by a turn round the rod. The silk threads were clipped short; and the wires, with the little clamping rod to which they were fixed, were allowed to hang out at the bottom of the wound. The edges of the incision were now united with thin silver-wire sutures, and the wound dressed with antiseptic precautions. The child was placed on a St. Andrew's cross, the upper arms of which were joined by a sheet of calico on which the body rested; the legs being securely bandaged with strips of adhesive plaster to the lower limbs of the cross. The pelvis and chest were also securely fixed to the apparatus. In this way, the movements of the child were effectually controlled.

Two days after the operation, the scrotum was swollen, as if a portion of hernia had escaped from beneath the bandages; but this proved to be only a soft fluctuant swelling, probably an effusion of serum into the artificial tunica vaginalis, which had been formed by the folding down over the testicle of the lower half of the hernial sac, as described in the operation. In two days, this swelling had disappeared, and the scrotum was in its natural state. On the fourth day after the operation, the wound was dressed. It was found almost united, except in the place where the wires were left hanging out. On the tenth day, the little clamp and wire were removed, and the parts were found quite matted together.

It is unnecessary to detail the further progress. The dressings were changed every two days, and at the end of four weeks cicatrization was practically complete. The child was then freed from restraint; but, for precaution, a bandage was still applied round the groin.

May 1st. At this date, the radical cure of the hernia is perfect. No amount of exertion either of the limbs or on crying has the slightest effect on the inguinal region of the abdominal walls.

The result has exceeded my expectations, and I shall not hesitate to practise the operation in all similar cases, and even to adopt it as a means of accomplishing a radical cure in cases of strangulated hernia in which an operation for the relief of strangulation has become necessary.

Spondylitis Deformans.

Dr. ALLEN STURGE, at a recent meeting of the Clinical Society of London (*Lancet*, May 24, 1879), read the notes of a case of spondylitis deformans. The patient, a man aged twenty-six, was an artificial flower maker, who had been under his care at the Royal Free Hospital. The mother suffered very much from rheumatism. One brother had severe chronic rheumatism, and another was said to be subject to gout. The patient's health had been good before the present illness; there was no distinct history of syphilis. Prior to his illness he had been a strong, upright man, and a rapid runner. The present condition began eight years ago, with pain in the back, which had never since quite left him. Gradually the back became stiff, both in the cervical and dorsal regions. When he came under care the spinal column was remarkably fixed throughout. The lumbar and dorsal regions together formed a curve of large radius, with the convexity backwards (spinal lordosis); and the spine, as a whole, was on a plane posterior to that of the sacrum, producing a projection forwards of the abdomen, the legs being carried back in a corresponding degree to catch the centre of gravity of the body. There was no special tenderness of the spine at any part. In bending forwards, the spine, as a whole, remained quite stiff, and flexion appeared to be almost entirely confined to the lower two or three lumbar vertebrae. The cervical part of the spinal column was very stiff. Power of flexion of the head forwards and backwards was very limited, and lateral movement of the head was almost abolished. Power of rotation, though imperfect, was less impaired than

the other movements. The thorax was very rigid; breathing was almost wholly abdominal. On drawing a deep breath there was a slight movement of expansion, but scarcely any of elevation. Dr. Sturge remarked that this condition was one of very rare occurrence, and would appear to be rheumatoid in its nature. The post-mortem changes were described a good many years ago by Professor R. W. Smith, of Dublin, and more recently by Dr. von Studen, of Altona. They were like those met with in rheumatoid arthritis of other parts of the body—viz., absorption of the articular cartilages, nodular growths on the articular surfaces of the bones and ankylosis of the adjacent vertebræ, to which must be added absorption of the intervertebral cartilage. It might coincide with rheumatoid affections elsewhere, but in many cases it was confined to the spine or to the spine and costo-sternal articulations. Todd had seen a case in a man aged twenty-five, and Eulenberg had met with it in a girl twelve years old. As a rule, however, bony ankylosis of the vertebræ occurred in old people; but it was doubtful whether the disease in young persons could be looked upon as identical with that which occurred in old people.

Mr. BRYANT referred to a case recorded by Dr. Fagge in the *Pathological Transactions* (vol. xxviii. p. 201), where there was a general ankylosis of the vertebræ and of the costo-vertebral articulations. The patient died from fracture of the ribs. He had been subject to rheumatism. In reply to the President, he said that in that case there was only slight deformity. To Mr. Barker, he said there was actual synostosis.

Mr. HEATH said that fusion between some of the vertebræ was not so rare. Some ankylosed spines were found in the burying-ground which was excavated during the rebuilding of King's College Hospital; but such instances would hardly have led to the amount of deformity present in Dr. Sturge's case, where the curvature seemed to resemble that of angular curvature.

Excision of Papilloma of the Bladder.

At a recent meeting of the Clinical Society of London (*Lancet*, May 24, 1879), Mr. A. T. NORTON read the notes of a case of papilloma of the bladder, excision, death. A female, 34 years of age, was admitted into St. Mary's Hospital, suffering from the effects of long-continued hemorrhage from the bladder. The urine contained also much mucus and phosphates, small portions of phosphates being frequently passed. There was great pain after micturition, and constant desire to pass water. No calculus could be found, but the bladder was thick in the region of the trigone; and a digital examination per urethram under chloroform confirmed the diagnosis of a tumour of the bladder. The growth was one inch square, slightly raised, and coated with phosphatic deposit. Its removal was decided upon, the alternative to the patient lying between the risk of a severe operation and the continued pain, possible early fatal hemorrhage, or blood-poisoning. It was impossible to remove the growth through the urethra, and it was decided to cut away the mass by opening the vagina. It was considered that the growth could not be removed without cutting through the urethra. The spring scissors were inserted, one blade into the bladder nearly up to the tumour, and the other into the vagina, and closed; the front wall of the vagina was then incised centrally to within half an inch of the uterus, and the vaginal wall was dissected from the bladder; the growth was then seized with the vulsellum forceps and drawn forwards, and was then excised by the scissors and removed. Bleeding was arrested by actual cautery, and the lateral flaps of the vagina approximated by sutures. To prevent further hemorrhage, a catheter was inserted, and the bladder compressed by plugging the vagina. No bleeding of importance took place. The temperature remained below normal, and the pulse rose to 120.

Severe vomiting was persistent until the tenth day after the operation, notwithstanding subcutaneous injection of morphia and five-grain doses of quinine administered frequently by the stomach. After the tenth day she was considered out of danger, was making good progress, took food well, and was cheerful; but two days later, after vomiting, she fell asleep, and died in sleep from syncope. On post-mortem examination the heart was found to be healthy, its left side empty. The blood was mostly fluid. The wound was sloughing on the surface, some phosphatic deposit around it and the orifices of the ureters. Vesical mucous membrane congested, but of normal consistence. No peritonitis, and no thrombosis. Examination showed that so far as the peritoneum was concerned a tumour nearly twice the length and breadth could have been removed through the wound, but the ureters would be included in such an operation. Whether or not such inclusion of the ureters would add to the severity of the operation cannot be proved, but it is probable that the urine would escape without injury to the parts around. A microscopical examination showed the tumour to be a papilloma. Since writing the above case Mr. Norton said that he had operated upon a second case of tumour of the bladder, now in the hospital. This case had completely recovered from the effects of the operation.

Mr. HEATH asked if the growth extended beneath the mucous membrane; for if confined to the surface it might have been removed by scraping.

Mr. KNOWSLEY THORNTON had lately met with a similar case in which he advised operation, but the patient objected. She was an old lady, and had some symptoms of stone. Some large nucleated cells being found in the urine, he dilated the urethra, and found a soft mass projecting into the bladder above the left ureter. It was of the size of a half walnut, and examination of a small shred showed it to be a round-celled sarcoma. At the time he had thought of three methods of removal, viz., through the vagina, as Mr. Norton had done; or by a suprapubic operation; or by opening the bladder through the peritoneum. There would be no great risk in the third of these alternatives, provided the urine were not putrid.

Mr. MORRIS asked whether Mr. Norton had operated on account of the profuse bleeding or on account of the pain endured by the patient; and also whether, in the operation, he had removed the whole thickness of the wall of the bladder? A few years ago he had under his care, at the Middlesex Hospital (the case is recorded in the *Med.-Chir. Transactions*), a woman, 46 years old, who had suffered from vesical hemorrhage for eight or nine years, and for a few years from pain. A small papillary growth was found, and at first strong caustics were applied with temporary relief. Then he removed a large portion of the growth by the *écraseur*. Although the symptoms were relieved at the time, the patient died ultimately from hydronephrosis, set up by occlusion of the ureters by the growth.

Mr. HULKE asked why the urethra was slit up. He could quite understand that it might be necessary to open the bladder, but he did not see why it was needful to slit up the urethra. Then it appeared that the anterior wall of the bladder and of the vagina were divided, and that much and continuous vomiting followed these severe measures. It was true that after death the orifices of the ureters were found to be free, but then caustic was applied after the removal of the tumour, and the stitches in the wound would drag on the ureters, so that it was quite possible that they were for a time occluded.

Dr. GLOVER asked if any other organ was involved. He mentioned a case of vesical hemorrhage, due to a growth in the bladder, which ended fatally very rapidly, and he urged that, before operating, the constitutional condition of the patient should be considered. None of the neighbouring organs were affected.

Mr. BRYANT asked Mr. Norton why, after having confidence in dilatation of the urethra for the examination of the case, he had not the same confidence in it for operation. For localized growths could well be attacked through the dilated urethra. He had thus removed a sessile growth from the bladder by forceps and écraseur, and in two other cases he had found no difficulty. But he would hesitate long before proposing the severe measures described by Mr. Norton. He was not, however, prepared to say that in Mr. Norton's case the operation was not a justifiable one.

Mr. MARSH agreed with Mr. Bryant up to a certain point. What was the extent to which the urethra could be dilated without leading to incontinence of urine? Mr. Lane recommended that nothing larger than an acorn should be forced through the urethra. The operation of division of the vesico-vaginal septum was rather dangerous and formidable; but Mr. Marsh had seen it done, and had done it himself, for the removal of calculi. He agreed with Mr. Hulke as to the serious character of an operation in which the urethra was laid open in its whole length.

Mr. BRYANT added that by rapid dilatation almost anything might be done. Slow dilatation nearly always led to incontinence.

Mr. NORTON, in reply, said that the growth did not extend beneath the muscular coat. In operating he cut down into the vagina, peeled the vagina from the bladder, seized the bladder, and, dragging it forwards, removed the growth by spring scissors. The danger of hemorrhage, possibly leading to early death, determined him to perform the operation. He did not think that splitting the urethra added much to its gravity. The vomiting he attributed to the operation. Urine flowed freely. No other organs were examined after death. He did not think that the constitutional condition of the patient should be considered when she was dying from the disease; nor did he think he would have succeeded in removing the growth had he attacked it through the urethra.

Midwifery and Gynæcology.

Use of Creasoted Glycerine in Ulcerations of the Neck of the Womb.

MENDESSOHN says (*Revue de Thérap. Méd. Chir.*, Feb. 15, 1879) that he has derived much benefit from painting the ulcerated portions of the neck of the womb with the following solution: R, pure creasote 2 grammes; glycerine, 50 grammes; alcohol, 25 grammes. This was applied either every day or every other day, for a length of time varying from twelve to forty days.

Thirty-seven patients in all were treated; twenty-eight were suffering from simple ulcerations or erosions; twenty-six of these recovered, and two improved much in health. Of seven cases of granular and fungoid ulcerations, six recovered and one improved. The mean number of days they were under this treatment was seventeen; only one patient remained under it for forty-four days, as in her case there was a complication arising from a metritis with considerable leucorrhœa.

Two cases of chancrous ulcerations were treated with creasoted glycerine for thirty to forty days, without success, so that the author was obliged to recur to iodoform, which induced speedy recovery.—*London Med. Record*, May 15, 1879

Statistics of Uterine Fibroid Tumour.

Dr. ÖRUM, in Howitz's *Gynækol Meddelelser*, says that fibromata of the uterus have been found in 53 out of 1002 bodies of females examined *post-mortem* in the Communal Hospital of Copenhagen. The state of the uterus was noted in all the cases. No fibromata were found before the tenth year; in women above 20 years of age, they were found 7.75 per cent.; in women above 40, in 9.5 per cent. The tumours were in 28 cases single, in 9 double, and in 16 cases there were several in the same individual. In more than half the cases (28) they were small—as large as a nut. In 19 cases they were interstitial, in 13 subserous, in 5 submucous, and in 8 various forms were found. Fibrocystic degeneration was present in one case. In one case the fibroma gave rise to fatal peritonitis.—*British Med. Journal*, May 31, 1879.

Tubercle of the Cervix Uteri.

M. CORNIL has presented to the Paris Hospital Society two very interesting and rare cases of tubercle of the vagina and uterine cervix. One case occurred to himself, and the other to M. Rigol. His own case was that of a phthisical patient, who presented a localized tumour in the deep part of the pelvic peritoneum, with uterine pains and leucorrhœa. With the speculum, he ascertained a superficial erosion of the cervix uteri at the level of the meatus. This ulceration was about half a centimètre in diameter, with sharply cut borders and yellow surface. On one of the borders were three small yellow granules slightly projecting. The ulceration was touched with a brush moistened with tincture of iodine diluted with hot water. Cicatrization was rapid; and three weeks afterwards the patient left the hospital almost completely cured. At the same time, a slight ulceration was noted on the frænum of the tongue; this had also arisen by yellow tuberculous granulations, and rapidly cicatrized. M. Cornil especially drew attention to the rarity of tuberculosis of the uterine cervix and of the vagina. In the necropsy of M. Rigol's patient, general miliary tuberculosis was found. There was a crop of whitish granulations on the cervix uteri and in the wall of the vagina; nothing in the cavity of the cervix. In these two cases, the lesions were clearly marked. M. Cornil gave an account of the microscopic examination of the granulations. M. Fournier, while recognizing the rarity of tubercles of the cervix, had, nevertheless, in eight or ten cases observed on the cervix ulcerations which were certainly not chancres. But these women were tuberculous; and he had asked himself if he ought not to put these ulcerations to the account of the tuberculosis; but he had never yet seen the initial tubercle. The history of tuberculosis of the cervix was still to be studied. Finally, M. Fournier admitted that in scrofulous and phthisical persons ulcerations are found, and that these ulcerations may be regarded as tuberculous. M. Cornil agreed with M. Fournier. He was, however, of opinion that not all the ulcerations of tuberculous persons were tuberculous, and that this was a question deserving of study.—*British Med. Journal*, May 17, 1879.

The Jaundice of New-born Children, and the Proper Time for Tying the Funis.

In an article on the Pathology of the Jaundice of New-born Children, Dr. PORAK (*Annales de Gynécologie*, Sept. and Oct. 1878) supports the view that this disorder, in the great majority of cases, is of hæmic origin, and not dependant on any hepatic obstruction, or any peculiar condition of the hepatic circulation. Under the definition of jaundice, the author includes all those cases in which a yellow coloration of the skin arises spontaneously, and does not limit himself, as some authors have done, in the consideration of the jaundice of the

new-born to those cases in which there is a yellow tinge of the conjunctivæ. When the surface of the body is much reddened, and a slightly jaundiced tint of skin is thus rendered difficult to recognize, he finds that the best means of diagnosis is to expel the blood for a moment by firm pressure with the finger upon a limited surface.

In his observations of a large number of children, the author divides cases of jaundice into three degrees. He finds that the affection of the conjunctivæ by itself fails to form a satisfactory distinction, for although their coloration generally coincides with intensity of the general yellow tint of the body, it is quite independent of its extent. The *first degree* of jaundice he calls that in which the chest, the back, and the face are alone affected. The tinge generally commences in the face, but sometimes upon the chest, where it is generally deeper than elsewhere. The conjunctivæ always remain unaffected, and the yellow tinge is always very slight. It generally commences towards the end of the first day, and has completely disappeared by the third or fourth day.

In the *second degree* the jaundice is more extended; the abdomen, and sometimes the upper segment of the limbs are yellow. The hands and feet, and generally the legs and forearms, remain free. The conjunctivæ are generally yellow, but the author has observed several cases of very extensive jaundice in which they remained white. Jaundice of the second degree generally lasts from three to six days, and has completely disappeared by the sixth or seventh day. In the *third degree* the jaundice is general, and the author distinguishes it from the second degree by the coloration of the hands and feet. The author has never found the urine to contain pigment except in a few instances in which the tinge of the skin was not only much deeper than usual, but acquired a greenish tint. In these the jaundice was of much greater duration, and commencing towards the end of the first day, had often not disappeared by the ninth or tenth day. The author considers them to have a different pathology, and to depend on hepatic obstruction, not, like the authors, on a hæmic cause.

Out of 245 children, the author found only 50, or 20.16 per cent., who had no jaundice; 34, or 13.71 per cent., had jaundice of the first degree; 91, or 36.69 per cent., had the second degree; and 73, or 29.50 per cent., had the third degree. No special digestive trouble was found to be associated with the jaundice, and absence of bile in the feces was *never* observed. As to the condition of the urine, the author finds, that while the fetal urine is pale and clear, that passed for the first few days after birth is rather deeply coloured, and often deposits a sediment. After the third day, the urine generally becomes clear and more abundant. In the case of jaundice, the author did not observe any deviation from these changes, except in the three instances only out of 248. In these it contained bile-pigments, and he regards them as having a different pathology. The author accepts the distinction made by M. Gubler as to the condition of the urine in obstructive jaundice, and that due to a changed blood-pigment, which he calls hæmaphéin—namely, that in the former case the urine is greenish-yellow, stains linen, and gives a play of colours (green, blue, violet, red) with nitric acid, while in the latter case it is pale yellow with a brownish tinge, and with nitric acid gives only a brownish-red tint. In most cases of jaundice of new-born children, even of the third degree, he finds that the careful addition of nitric acid in a test-tube brings out only an extremely thin reddish diaphragm, but in a few instances a much broader dark band was produced above this, showing some pigment not usually present in the urine, which he thinks may be hæmaphéin. Of the three jaundiced children whose urine contained bile-pigment, one died in the hospital, and the other two were lost sight of when they appeared

to be in a hopeless state. In all three of these cases the motions were strongly tinged with green, showing that there was no obliteration of the biliary ducts.

As to the pathogeny of the disorder, the author first discusses the theory that it depends upon local or general cutaneous congestion, escape of blood from the vessels, and changes in its colour like those which occur in an ecchymosis. One or other form of this doctrine has been accepted by Breschet, Billard, Valleix, Andral, Weber, West, Zeissl, and others. To this the author objects that, if it were true, the changes of tint ought to be observed which occur in an ecchymosis, but are absent in the jaundice of the new-born; and further, that it fails to explain the cases in which the conjunctivæ are affected, and those in which the jaundice is limited to the trunk and face. Against the view that the jaundice is obstructive, due to retention of meconium or catarrh of biliary ducts, according to the latter opinion of Virchow, he contends that the character of the urine, so rarely containing any bile-pigment, shows that obstructive jaundice is exceptional in the new-born. Against the view of Frerichs that the cause is a relative excess of pressure in the bile-ducts, due to sudden diminution of pressure in the portal vein, and consequent reabsorption of bile, he argues that numerous cases of pathological obliteration of the portal vein have occurred, and that jaundice has not been the consequence, while the same argument from the state of the urine applies to this as to the last theory.

In favour of the view that the jaundice is of hæmic origin, the author cites the anatomical evidence of Virchow (who at first maintained the hæmic theory, though he has since abandoned it), with reference to the urinary infarctus of new-born children. That author found these small masses in the kidneys to contain a dark pigment, which gave with nitric acid a reaction different from that of bile-pigment, while the same pigment frequently infiltrated the epithelial cells of the kidneys, and their nuclei. Neumann also, in seven cases of jaundiced children who died within the first week, found similar infarctus in the kidney, and also found in various organs both within and without the vessels, small acicular dark-red crystals (hæmatoidin or bilifulvin). In children not jaundiced, who died within the same period, these crystals were not found. Krebs and Orth have also found similar crystals in cases of jaundice of new-born children. Similar crystals are found in macerated fetuses, whose blood has undergone cadaveric change, and stained their tissues, forming the fetus sanguinolentus of the Germans. The chemical distinction between hæmatoidin and bilifulvin being still undetermined, the author considers that these crystals must be ascribed to blood-pigment. From observations by Lépine and Hayem, he infers that great changes take place in the first few days of life both in the number and size of blood corpuscles, from which must be inferred a rapid evolution and coincident destruction of them, the pigment resulting from the latter of which processes has to be partly excreted by the kidneys. To anomalies in this process, probably due in part to a deficiency of hepatic activity, the author attributes the production of the hypothetic hæmaphéin, a derivative of the imperfect elaboration of hæmoglobin, and the presence of this in the liquor sanguinis he considers to be the cause of the hæmic form of jaundice in new-born children. With this view agrees the fact that children are more liable to jaundice who are enfeebled, or whose nutrition is deficient, as children in foundling hospitals, twins, or those born prematurely.

The author has also made a number of observations on the progress in weight in infants, to determine the advantage or otherwise of adopting the plan proposed by Budin of not tying the funis until some minutes after birth, when it has ceased to pulsate, in order that the infant may have the benefit of the additional amount of blood which, by this means, is withdrawn from the placenta (see

Obstetrical Journal, vol. iv. p. 194). He finds that when the funis has been tied late, the children do not appear to thrive better than when the old plan has been followed, and that in the former case there is a greater loss of weight during the first day or two. He further finds that when the funis has been tied late, the children are notably more subject to jaundice, and he considers that this effect of an additional quantity of blood in the circulation is a further evidence in favour of the hæmic origin of the disorder.—*Obstetrical Journal of Great Britain*, May, 1879.

Hygiene.

Erysipelas Caused by Sewer Gas.

Years ago, the idea that facial erysipelas, or indeed that any variety of this dire disease, could be originated by the entrance of sewer-gas into houses, hospitals, or institutions, would have been condemned as too absurd for credence. Bitter experience, extending over a number of years, backed by the researches of Mr. Pridgin Teale and others, has, however, finally settled the question in dispute. There is now no more doubt that erysipelas is originated by sewer-gas than that typhoid fever is due more often than not to impure water. For instance, at the Old Infirmary, Lincoln, which was situated on a hill above the city, erysipelas and sewer-gas were constantly present in the wards. We remember seeing twelve or fifteen cases there some twelve years ago. At that time the hospital drains communicated with the town sewers; and as neither were ventilated or disconnected, the hospital had the benefit of the full pressure of the sewer-gas of Lincoln, because the hospital lavatories and closets occupied the highest points to which any of the sewer connections extended. At Manchester, as we showed some months ago, sewer-gas had demoralized the health of the staff, and had so increased the amount of erysipelas and pyæmia that the surgeons were afraid to perform even the smallest operation. Recently the authorities of a large London hospital proceeded to ventilate the whole of the drains and sewers in connection with their institution. Up to the time these alterations were made, pyæmia and erysipelas had almost driven the medical staff to despair. When the whole of the ventilation was completed, and so soon as the pressure was removed from the traps of the closets and lavatories, no fresh cases were found to occur. For months the hospital wards were free from erysipelas and pyæmia. Suddenly, however, there was a fresh outbreak of these diseases, but it was noticed that the epidemic was confined to one of the surgical wards, built apart from the main building on the pavilion plan, and having only one story. Close investigation proved that the ventilation pipe in this wing had been stopped up by a careless workman. When this was remedied, all trace of the epidemic disappeared, and for four years this hospital has been almost free from these diseases. Space will not allow us to quote further evidence on this occasion, but any one who is interested in the subject will obtain much useful information from Mr. T. P. Teale, of Leeds, who has made this subject almost a special study. We have been led to make the above remarks because, during the past week, an investigation of great interest has been conducted by the Somersetshire Coroner into the causes of a fatal outbreak of erysipelas at the County Lunatic Asylum. It appears that from December, 1878, to May, 1879, 23 cases of erysipelas oc-

curred in the female infirmary ward, of which 2 were fatal. Bad smells had been constantly present in this ward, and in other parts of the building, for many months past. Several of the inmates had suffered from severe diarrhœa, of which one died; sore-throat, loss of appetite, headache, and nausea attacked most of the patients. On the male side 9 cases of erysipelas occurred, 2 of which were fatal. Here, then, we find 32 cases of erysipelas occurring in a lunatic asylum in five months, of which 4 proved fatal. When we remember the nausea, headache, sore-throat, and general malaise experienced by other inmates, coupled with the epidemic of diarrhœa and bad smells, it is not difficult to divine that sewer-gas was almost everywhere present throughout the institution. This was suspected by the superintendent, Dr. Medlicott, and so with the aid of the assistant medical officers, Messrs. J. F. Wood and T. S. Sheldon, a searching investigation was made into the drainage arrangements. It was then discovered that none of the soil-pipes were ventilated; most of them were of lead, and several were rat-eaten and riddled with holes. On taking out the pan and siphon of the infirmary closet a very bad smell was present, which was found to be caused by a hole in the soil-pipe, 3 by 1½ inches. This particular soil-pipe had a direct communication with the main sewer. The main drain outside the infirmary ward—where most of the erysipelas cases occurred—had been choked more than once during the year, and on one occasion it was blocked entirely to the extent of three or four yards. In other parts of the building the fall was insufficient, and in consequence the main drain had been stopped several times.

In brief, almost every sanitary evil was found to be present in this ill-fated institution; fermenting sewage was a constant factor, and sewer-gas, conveyed from the sewers to the wards by the rat-eaten soil-pipes, had committed its fatal ravages unchecked and unsuspected for at any rate months, and we suspect even for years.

The moral is plain to read, but difficult to get people to realize. Modern buildings, whether large or small, especially where they are situated in or near towns, must pour their sewage into the main sewers. As a consequence drain-pipes must, to a greater or less extent, pass inside the houses, and so a risk or sewer-gas is incurred. What is the remedy? Simply to put an open manhole, with pipe-drains passing through it between the sewer and the house, to put a siphon with ventilator between the manhole and the sewer, and in every case to carry the soil-pipe above the top of the buildings, and to leave it perfectly open at the top. In this way sewer-gas is effectually excluded from houses, a constant draft of fresh air passes down the open manhole, and through every inch of the household drains, and defective traps and rat-eaten soil-pipes may practically be defied. Unless the connection with the sewer is cut outside an inhabited building, and unless every inch of soil-pipe is thoroughly ventilated in the simple way we have described, danger of blood-poisoning exists. With these precautions, simple and comparatively inexpensive as they are, even the oldest buildings may be made not only sweet but perfectly healthy.—*Sanitary Record*, June 6, 1879.

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AUGUST, 1879.

Anatomy and Physiology.

Physiology of the Secretion of Sweat.

That the secretion of sweat is under the control of the nervous system has been recognized for some years past, LUCHSINGER and others having demonstrated that a copious discharge of this secretion can be induced in the feet of the cat and dog by stimulation of the sciatic and brachial nerves. That it is essentially independent of any changes in the circulatory system is shown by the fact that it can be made to occur in an amputated member, and in limbs the temperature of which is below the normal. The secretion is thus shown not to be a mere transudation, but the result of the activity of special glandular cells, called forth, as in the case of the salivary glands, by the stimulation of certain nerves. The sudoriparous nerves, running in the sciatic nerve, are derived from the abdominal cord of the sympathetic; for if this be divided, and the lower extremity be stimulated, perspiration breaks out on the hind foot, though if the sciatic be first divided, no such secretion is observed. After division of the sympathetic in the abdomen on one side, the animal no longer sweats on that side when exposed to heat. But the fibres do not arise in the great sympathetic; they appear to emerge from the spinal cord by the rami communicantes of the first four lumbar roots, and the last two or three dorsal. Sweating can be induced by reflex action, and also in a very marked and singular manner by jaborandi, and by the active principle of that drug—pilocarpin. In from three to five minutes after the subcutaneous injection of a solution of hydrochlorate of pilocarpin, in man, the flow of saliva increases, perspiration appears, first on the head, and then gradually over the whole body, and lasts about an hour, or, if the patient be in bed, for two or even three hours. This effect Luchsinger considers to be due to the pilocarpin acting as a direct stimulant to the nerve-centres. He tied the abdominal aorta in a cat, and then injected pilocarpin into a vein. Under these conditions the pilocarpin was unable to reach the glands in the posterior extremities; and thus to act as a direct stimulant; nevertheless the feet were soon bathed in sweat. Atropin inhibits the secretion of sweat, for if, after the injection of one one-hundredth of a gramme of pilocarpin, three one-thousandths of a gramme of atropin be injected, the commencing perspiration is arrested in about ten minutes. If now a hundredth of a grain of pilocarpin be injected into one of the feet, beads of sweat burst forth on this foot; but the rest of the body, being still under the influence of atropin, remains dry. The experiments of Luchsinger have been repeated and confirmed by Nawrocki, who satisfied himself that there is a common centre in the medulla for the secretion of sweat in both fore and hind feet. He followed the course of the fibres innervating the glands of the fore limb, and ascertained by means of sections at different points that they leave the spinal cord between the third and fifth cervical vertebrae. These fibres enter the brachial plexus with the thoracic portion of the sympathetic, and are occasionally confined within the

sheath of the median nerve, though more frequently they are distributed between the median and ulnar nerves, the median having the larger share. Adamkiewicz, in a more recent publication, finds, like his predecessors, that the secretion of sweat is independent of the circulation, and that it may be induced by artificial or voluntary stimulation of the muscles, or of their nerves, by mental stimuli, as by the imagination; and, lastly, as a reflex act by stimuli applied to the skin. In man the secretion is always bilateral and symmetrical, and is not necessarily eliminated in the immediate vicinity of the point stimulated. Heat excites it, and, indeed, the activity of the secretion seems to stand in direct relation with the temperature of the several parts of the body. His views differ from those of Luchsinger in regard to the nervous apparatus, for he believes that the motor centre of the secretion is situated on the surface of the brain. The nerves pass through the medulla to the spinal cord, and unite at the secretory centres, which are probably placed in the anterior horns of the gray matter. From these horns secretory fibres emanate and leave the cord in connection with motor nerves, whilst others enter the sympathetic at higher points of the cord. Vulpian, in following out these experiments, found that although some of the excito-sudoral fibres may, in the cat, pass from the sympathetic to the sciatic nerve, yet that there are others in considerable number which pass directly from the spinal cord by the seventh lumbar and first sacral—that is to say, by the roots of the sciatic itself. Vulpian points out that an interesting parallel may thus be drawn between the nervous mechanism of the sweat-glands and that of the salivary glands; for it is known that the submaxillary glands receive excito-salivary fibres from the chorda tympani, and other fibres from the cervical portion of the great sympathetic. He is, however, unable to coincide in the view that the filaments for the sweat-glands in the foot and forelimb of the cat pass out from the cord *entirely* with the spinal roots of the superior thoracic ganglion. A large part no doubt do so, but others accompany the roots of the spinal nerves entering into the formation of the brachial plexus. Luchsinger and Truempy have quite recently investigated the chemical properties of sweat. An acid reaction is generally attributed to this secretion, but these observers have ascertained that in man as well as in the cat the reaction is really alkaline, and that the acidity which has been observed is due to the fact that the secretion of the sebaceous glands is ordinarily acid, or rather becomes so in the act of decomposition, to which it is prone. The whole subject has been well analyzed and treated by M. Blanchard in the *Progrès Médicale*.—*Lancet*, June 14, 1879.

The Movements of the Eyelids.

At a late meeting of the Royal Medical and Chirurgical Society (*Lancet*, June 14, 1879) a paper was read on "The Movements of the Eyelids," by W. R. GOWERS, M.D., of which the following is an abstract:—Under normal conditions the lids leave the cornea approximately uncovered in all positions of the eyeball, moving with it. For these movements and for the voluntary closure and opening of the lids, there are only two muscles, the orbicularis and the levator. These will not explain all movements, and it is probable that the eyeball itself moves the lids, not by the conjunctival connection, but by the pressure of the convexity of the sclerotic, and to a less extent of the cornea, the edges of the lids lying in or near the sclero-corneal sulcus. This effect is greatest on the upper lid, partly because the tarsal cartilages are attached at their extremities below the transverse axis of the eyeball. The eyelids are moulded on the globes, the shape of the palpebral fissure depending on the position of the eyeball, and being curiously altered in some abnormal lateral positions. In closing the eyelids gently the lower lid is raised by the palpebral orbicularis; in rotation up of the

globe the lower lid is raised, not by the orbicularis, but by the pressure of the globe, and the movement is slight if the globe is very prominent. Depression of the lower lid in looking down is by pressure of the cornea. The upper lid is maintained in position by the balance of tone between the levator and the orbicularis. If the latter is paralyzed, the lid is a little higher than normal. The descent of the upper lid, in looking down, is not by contraction of the orbicularis (for it is unaffected in facial palsy), but is by the pressure of the sclerotic against the tarsal cartilage. The lid is raised on upward rotation of the globe by the levator, the contraction of which, if sudden, is excessive. With this is associated a synergic action of the frontalis; the latter is sometimes habitual, and then is relaxed with the levator on looking down. The action of the levator associated with that of the superior rectus is beyond voluntary control, and, in the simulated ptosis of hysteria, necessitates a strong contraction of the orbicularis to keep the lid down, if the patient is made to look up. The associated relaxation on looking down prevents almost all voluntary contraction of the levator in that position. Gentle closure of the lids, as in sleep, is by the palpebral orbicularis; the levator being relaxed, the recti passive. Forceful closure is by the whole orbicularis, the levator being released and dissociated from the superior rectus, which contracts, rolling the globe up. Hence, probably, the centre for strong closure of the eyelids is physiologically distinct from that for their gentle closure. If the orbicularis is paralyzed the associated inhibition of the levator still occurs on an attempt to close the lids. But, if the inferior rectus is paralyzed, a fruitless attempt to rotate the eyeball down is not attended with inhibition of the levator. This phenomenon (of which photographs were shown) is difficult to explain. Possibly, this relaxation of the levator is not the result of a central mechanism, but is reflex from the commencing tension on the fibres, and so does not occur if the globe does not move. If so, the fact is of much interest in relation to the mechanism of other movements in the body. Lastly, it is pointed out that the eyelids commonly participate in the movements of the eyeballs in vertical nystagmus. After the reading of the paper, Dr. Gowers exhibited a patient who illustrated well the dissociation of isolated voluntary movements of the upper lid from the action of the superior rectus. She had slight double ptosis, more on right than left side, and had no power to bring the eyelids voluntarily into normal position. When she looks up, however, the levator contracts to full degree in conjunction with the superior rectus.

Dr. BAXTER asked for an explanation of Graefe's phenomena in Graves's disease, when the upper lid fails to accompany the globe in its downward movement, so that a zone of white sclerotic is left between the lower edge of the upper lid and the cornea. Dr. Gowers had pointed out that normally the descent of the eyelid was due to a relaxation of the levator occurring synchronously with contraction of the inferior rectus, the globe dragging the lid down. If there were exophthalmos this mechanism should be even more marked; or it might be that marked exophthalmos would prevent the fall of the lid. But in two cases of Graves's disease Dr. Baxter has now under care, there is no exophthalmos, and yet in both Graefe's phenomenon is marked.

Dr. GOWERS, in reply, said that since his attention had been directed to the subject he had not had the opportunity of examining cases of Graves's disease.

Materia Medica and Therapeutics.

Conchinin as an Antipyretic.

Dr. STRUMPELL has treated fifty cases of intermittent fever, enteric fever, pneumonia, erysipelas, puerperal fever, and phthisis with this drug, which has been strongly recommended by Wunderlich, von Böck, and Ziemssen in malarial, intermittent, and typhoid fever. He gives the results of his treatment in the *Allegemeine Medicin. Central-Zeitung* for May 14th. Conchinin was given in seventeen cases of enteric fever, where the cold-water treatment was not applicable. The patients were, if possible, bathed during the day; and at night, if the temperature were high, they took one or two *grammes* (fifteen or thirty grains) of conchinin, with diluted sulphuric acid and peppermint-water. The effects on the temperature were the same as those obtained by quinine. The fever decreased during the following eight to twelve hours, and at the same time there was a moderate decrease in the frequency of the pulse. Typhoid fever patients vomited, as a rule, from fifteen to thirty minutes after taking the medicine; this, however, did not interfere with its effects, because it had already been absorbed. In a few cases, the patients complained of singing in the ears. Given in the form of an enema, it did not produce satisfactory results. In twenty cases of intermittent fever, conchinin acted in the same way as quinine. A *gramme* and a half or two *grammes* were given in a convenient vehicle from six to twelve hours before the time when the attack was expected, and the same dose, or perhaps a smaller one, shortly before the next attack. Later on, half a *gramme* to one *gramme* of conchinin was given for several days in the form of pills or capsules; and this treatment was in every case attended by the best results. Conchinin has proved equally efficient in erysipelas and croupous pneumonia, but it has little or no effect on the remittent or intermittent hectic fever often met with in phthisis.—*British Medical Journal*, June 21, 1879.

Iodoform as an External Antipyretic.

In an article in the *Deutsche Medicin. Wochenschrift* for June 7th, Dr. COLSFELD, of Bremen, describes a case in which he accidentally found that the external application of iodoform was followed by a lowering of temperature. The subject was a phthisical patient, whose temperature had risen to 103.4 deg. Fahr. He complained of troublesome ill-defined pain in the left front of the chest, for the relief of which, other means having failed, iodoform collodion (having a strength of 33.3 per cent.) was applied. The next day the temperature had fallen to 98.6 deg. Fahr., and the pain in the chest had entirely disappeared. The iodoform was then omitted, and the temperature again arose; but it fell when the iodoform collodion was reapplied, the strength now used being ten per cent. The odour being unpleasant, the patient discontinued the application for two days; but the febrile symptoms set in so energetically that he again had recourse to it, with marked relief. Dr. Colsfeld says that he did not observe any ill effects to be produced by the application of the iodoform, but he thinks that the expectoration was reduced in quantity. He does not pretend to say that the application would be useful in reducing the febrile process in the purely pulmonary affections of the lungs, pleura, peritoneum, etc.; but he suggests that it might be tried. The author refers to the observations of Binz, who found that the internal administration of iodoform had the effect of reducing the respiration, pulse, and temperature in a cat.—*British Medical Journal*, June 21, 1879.

Antiseptic Dressings with Boric Acid.

SOLGER says (*Berl. Klin. Woch.*, 1878, No. 42) that he uses boric acid in the antiseptic treatment of wounds in the following way. The cotton-wool which is going to be used for the dressing is plunged into a 10 per cent. water solution of boric acid, which is warmed to a temperature of 50 deg. R., then taken out and allowed to cool down to 35 or 40 deg. R., put on the wound, which has been previously thoroughly disinfected, and kept in its position by another layer of dry cotton-wool and a bandage. The high temperature of the dressing has a hæmostatic effect on the wound. According to the manner in which it is used, boric acid will either increase or lessen the property of cotton-wool, allowing the secretions of wounds to filter through it. If a plug of cotton-wool be soaked in a 15 to 20 per cent. solution of boric acid at a temperature of 60 deg. R. and above, then allowed to cool down to 35 deg., and spread out over the surface of a suppurating wound or abscess, or a fresh wound, and fastened by means of dry wool and bandages, the boric acid forms on evaporating a large quantity of boric acid crystals, at the same time the wool adheres so firmly to the skin that it entirely excludes the air and remains thus for months. On the contrary, the wool will allow the secretions to filter through it if it has been soaked in a mixture of boric and carbolic acid (five parts of boric and two parts of carbolic acid, and 100 parts of water). Boric acid dressings will be found very useful in the minor surgical operations.—*Lond. Med. Record*, June 15, 1879.

Glycerine as a Food.

Some years ago glycerine was proposed as a supplementary food, capable, it was even said, of taking the place of cod-liver oil in the nutrition of the invalid. The recommendation was made upon theoretical grounds, and received little confirmation from experience. Careful observations which were made, especially by the late Dr. Cotton, at the Hospital for Consumption, failed to show that it produces any effect on nutrition such as results from the administration of cod-liver oil. The opinion was thus formed that glycerine possesses little or no claim to be regarded as a food. The question has not, however, until now received much scientific investigation. To some researches by Catillon and others we directed our readers' attention on a previous occasion.¹ The effect of glycerine on the interchange of material in the organism—i. e., its value as a food—has lately been further studied by Dr. Immanuel Munk, in a series of experimental inquiries undertaken at Berlin, the results of which are published in the current number of Virchow's *Archiv*. The question is of interest not merely because glycerine has been proposed for the purpose above stated, and is occasionally administered as a vehicle for certain drugs, or to the diabetic as a substitute for sugar, but also because it is, in one sense, a constant article of diet. It is known that fat is decomposed in part in the alimentary canal, under the influence of the intestinal mucus, into its fatty acid and glycerine, and the amount of this decomposition is at present unknown. Again, all wines contain a certain quantity of glycerine, which is one of the products of the alcoholic fermentation of sugar. Pasteur says that natural wines contain from six to eight grammes of glycerine per litre, while Neubauer puts the amount in the same volume at seven to eleven grammes. Moreover it has been proposed to use glycerine as a preservative agent. Munk has shown that the addition of two or three per cent. of glycerine to milk will postpone the lactic-acid fermentation for from eighteen to twenty-four hours. It is, therefore, important to know what influence is exerted by this substance on the vital processes. Of the toxic effect of large doses we possess

¹ The Lancet, vol. II. 1877, p. 322.

information; the experiments of Munk have reference to the effect of the digestion of small quantities. Whether any nutritive value can be ascribed to glycerine, and what quantity may be taken without interference with the processes of the body, are the points specially considered.

Any substance introduced into the economy may influence the decomposition of material in two ways—by increasing or diminishing, on the one hand, the destruction of the nitrogenous material, or the exchange of albumen, and on the other the excretion of carbonic acid and absorption of oxygen. The effect of glycerine on the latter has been already studied by Scheremetjewski. But it is to the former point, the effect on the albuminates, that attention must especially be directed to determine the food-value of any substance. This is indicated by the effect on the excretion of nitrogen, and in the case of man and the carnivora the nitrogen passing away by the urine and feces affords the necessary information. The value of the observations of Catillon on this point is lessened by the fact that the diet of the animals experimented on was not strictly regulated.

It has been found that large quantities of glycerine produce hæmoglobinuria and also diarrhœa, both of which disturb the accuracy of observation. It was necessary therefore to give such doses of glycerine as should not produce these effects, and in the case of dogs not to exceed twenty-five to thirty grammes daily. These quantities were found by Munk in no way to modify the excretion of nitrogen. Any influence of glycerine, at least in medicinal doses, on the exchange of albumen may thus be put aside. According to the ordinary definition of a food, glycerine does not possess any nutritive value. If, however, the urine only is examined, there is found a slight diminution in the amount of nitrogen, as observed by Catillon. This is quite compensated for by the increased excretion by the bowel.

What is the fate of glycerine introduced into the economy? Is it decomposed or excreted?—and if the latter, in what form? When large doses are given so as to produce hæmoglobinuria, the urine contains a substance which readily reduces copper, but has been said, on the ground of its effects on polarized light, not to be sugar, but to be probably a decomposition, or transformation product of glycerine. According to Plosz, moreover, it is not capable of fermentation. It is very difficult to say whether any unaltered glycerine passes away, since the detection of a small quantity in the urine is a matter of great difficulty. It seems certain, however, that the greater part, if not all, is decomposed in the organism, and that when moderate quantities only are given the decomposition is complete. It was observed by Weiss that the quantity of glycogen in the liver is increased by the administration of glycerine. From the analogy with other substances which have a similar effect, such as albumen, gums, etc., Munk suggests that the glycerine absorbed from the intestine and carried by the portal vein to the liver is not itself transformed into glycogen, but rather, by its quick decomposition, limits the use of the liver glycogen, or furthers its formation from other materials. However this may be, the glycerine undergoes decomposition without its products having any influence on the changes in albumen, such as the carbo-hydrates exert. With reference to this, it may be remembered that glycerine has no chemical connection with the carbo-hydrates, but is rather to be regarded as an alcohol—the tertiary alcohol of the propyl series.

The solubility of glycerine renders it highly probable that the greater part of that which is taken into the stomach passes rapidly into the blood. A small part may be unabsorbed, and in the lower part of the intestine may undergo fermentation and reduction, with the formation of butyric acid, carbonic acid, etc., although this decomposition can take place only in a neutral liquid—a condition not easy to obtain in the intestine. Gorup-Besanez has also shown that in an alka-

line solution, the action of oxygen in an active state breaks glycerine up into formic, propionic, and perhaps acrylic acids. There is some probability that, in the tissues, where similar conditions obtain, the same decomposition may occur; and the intermediate products, propionic and formic acids, may be further oxidized to their ultimate products, carbonic acid and water. Scheremetjewski showed that the ingestion of glycerine causes an increase in the excretion of carbonic acid, which Catillon has affirmed may amount to 7 per cent. This increase in the production of carbonic acid must be accompanied by the liberation of its equivalent of heat, and so the generation of heat should be increased by the administration of glycerine. Hence there is the highest probability that glycerine may be of service in this respect, but that it is of no value as a tissue-food.—*Lancet*, June 7, 1879.

Medicine.

On the Use of Benzoate of Soda in Diphtheria.

LETZNRICH says (*Berl. Klin. Woch.*, No. 1, 1879) that he has repeatedly given this drug in diphtheria, and has always found it to answer very well. He attributes his success to the antiseptic properties of the drug, by which the development of the diphtheritic bacteriæ is arrested. He also points out that it is a most effective remedy in infantile, gastric, and intestinal catarrh, and in mycotic catarrh of the bladder. In short, he fully corroborates Professor Klebs's statement when he says, that in benzoate of soda we possess a very powerful remedy in all affections arising from the presence of contagious matter in the system. The following is the author's method of administering the drug: *R.* Natr. benz. pur. 5 grammes, solve in aqua destillat.; aq. menth. pip., āā 40 grammes; syr. cort. leur., 10 grammes. Infants under one year were given a dessertspoonful every hour. Children from one to three years old, must take a larger dose, viz., a tablespoonful every hour, the proportion of the benzoate of soda being also increased from 5 to 7 or 8 grammes. To patients from three to seven years old, 8 to 10 grammes are given; those over seven, from 10 to 15 grammes. Adults should take from 15 to 25 grammes in the same solution, the proportion of the solvents and the syrup remaining the same. The diphtheritic membranes were powdered with benzoate of soda, in severe cases once in three hours, in lighter cases from two to three times daily. A solution of the strength of 5 per cent. forms a very efficient gargle for older children.—*Lond. Med. Record*, June 15, 1879.

On the Effect of Cold Air in Measles.

KACZOROWSKI says (*Przelad Lek.*, Nos. 6 and 7, 1878) that cold air is one of the most efficient remedies in eruptive affections. He happened to discover this interesting fact by mere chance in the case of a smallpox patient who escaped into the courtyard on a cold winter's day. The next day the pustules, which were already filled with pus, were dried up. Another case is that of a man who, while suffering from an abscess on his thigh, suddenly took measles, accompanied by a troublesome feeling of itching and burning of the skin. He was carried into a room without a fire, and, within a few hours, the itching subsided, the eruption disappeared, and the patient recovered from the measles on the third day.

The author has also found that in gangrenous affections of the lungs, or in inveterate fetid catarrhs of the trachea, cold air is a very efficient remedy. He

does not attempt to explain the fact, but says that he prefers cold air to cold baths in acute feverish affections.—*London Med. Record*, May 15, 1879.

Nitrite of Amyl in Sea-sickness.

Mr. CROCHLEY CLAPHAM, to whom is distinctly due the credit of introducing this remedy to the notice of the profession, again writes reminding us of the fact, and remarking that "with due attention to details he looks upon the drug as curative in at least 90 per cent. of all cases treated." By a reference to his first article on the subject, published in the *Lancet* of Aug. 21st, 1875, it appears that during several trips across the Pacific, Mr. Clapham treated altogether 124 cases. In 121 of these, he tells us, success was evident and complete. The drug was administered by inhalation, three drops of the nitrite being poured on a handkerchief held close to the nose of the patient, the inhalation being conducted rapidly. A caution is added, to the effect that not more than three drops should be used in the absence of medical advice. In July, 1878, we published an article on the same subject by Dr. J. Rudd Leeson, who was successful in about three-fourths of the cases treated, the remaining fourth complaining of a feeling of sickness, but without vomiting. One or two cases did not improve in any way. Dr. Leeson thinks that three drops for women and five for men is the minimum dose, but that caution is required. Dr. Clapham says it is not a dangerous drug, except of course in cases where the arterial system is more or less rigid from osseous deposits. In August last Mr. Clapham and Dr. R. Leeson each contributed a letter to our columns, in which the former quotes some favourable experiences of Dr. Crichton Browne in crossing to Sweden, and Dr. Leeson gives a very emphatic proof of the comparative harmlessness of that drug, for the particulars of which we must refer our readers to the *Lancet* of August 10th, 1878. On the 3d inst. Mr. Dingle, surgeon to the Peninsular and Oriental Company's ship *Mirzapore*, gives a favourable account of the remedy, saying that in one day he administered it in at least a dozen cases, and that in all the effect was markedly successful, though in some instances it was necessary to repeat the dose, which he limited to three drops. But one of Dr. Dingle's patients has written to us, and says that, according to his observation on the occasion referred to, the drug ought to be administered with very great caution and *always under medical supervision*. Later, as our readers will have observed, one or more favourable reports have appeared in these columns. Under such circumstances, and with such an accumulation of evidence, we consider it right, as Mr. Clapham suggests, to draw the attention of those who often "go down to the sea in ships" to the remedy. And we should recommend ship surgeons to take Mr. Clapham's standard—as a rule, to limit the dose to three drops, and not to take it except under medical advice. He also recommends that the patients when under treatment, should be in bed, because a good sleep is generally the first result, from which the person awakes wanting to eat. It is usually better to allow one fit of vomiting to occur before the treatment is commenced, "to insure the *bona fide* character of the seizure." Some, however, do not vomit at all, but are very ill, and with these, he considers the nitrite to be equally successful.—*Lancet*, June 7, 1879.

Intracranial Aneurism in a Boy.

Dr. VON UNGE relates in *Hygeia* (abstract in *Nordiskt Medicin. Arkiv.*, Bandet xi, 1st Häftet) the case of a boy aged 15, who had good health up to the age of 5, when he had measles. After this, it was said, he had constant headache, pain in the stomach, impaired appetite, and often diarrhoea with palpitation. At the age of 13, the headache became more troublesome, and was referred to a

point immediately under the crown of the head, somewhat towards the forehead. He often had pain in the legs. In the spring of 1878, he frequently had obstinate hiccough. In the beginning of June, 1878, he became worse, and a high fever set in. On the 17th, he had a convulsive attack affecting the whole body, followed by unconsciousness; this occurred twice in the day. On the 19th, he was admitted into the Serefina Hospital, where he died on the 23d in a state of coma. There was ptosis of the left eyelid; the temperature was 102° to 104° Fahr.; there was no albumen in the urine; the heart's action was much quickened, and the first sound was followed by a blowing murmur at the apex. At the necropsy, the subarachnoid space at the apex was found moderately full of a clear fluid; at the base and sides of the brain it was distended with coagula and a small quantity of blood-coloured fluid. On the left posterior cerebral artery immediately after the bifurcation of the basilar artery, was an aneurism of the size of a cherry. No change had been produced in the surrounding parts by the pressure of the aneurism. Where the aneurismal sac came off from the vessel, the lumen of the latter was filled by a thrombus. In several parts of the brain there were capillary hemorrhages. The aorta presented nothing remarkable. The muscular tissue of the heart was fragile; on the borders of the mitral valve were some excrescences of gelatinous consistence.—*British Med. Journal*, June 7, 1879.

Contributions to the Etiology of Hemorrhages in the Brain.

The following are the conclusions at which EICHLER has arrived (*Deut. Archiv für Kl. Med.*, Bd. 22, Heft 1; and *Med. Chir. Rundschau*, April, 1879): 1. Primary idiopathic cerebral hemorrhage is caused by the bursting of miliary aneurisms. 2. Miliary aneurisms are in reality true spontaneous aneurisms. 3. They owe their existence to chronic endarteritis, which is identical with arterial sclerosis. 4. Both miliary aneurisms and arterial sclerosis are an essentially senile affection. 5. Dissociating aneurisms must be carefully distinguished from miliary aneurisms. They are simply hæmatomata of the coat of the vessel, and never the cause but the result of a hemorrhage. 6. Similarly capillary ectasies must be separated from miliary aneurisms. The former may be compared to the telangiectasis which occurs in other places; both affections may be congenital. 7. The walls of the intracerebral arteries consist only of three layers; the inner and middle layer, and an external layer which is separated from the muscular layer by a lymphatic space.—*London Med. Record*, June 15, 1879.

Ophthalmoscopic Appearances in the Tubercular Meningitis of Children.

The following is an abstract of a paper on this subject, which was read by Dr. GEORGE GARLICK, at a late meeting of the Royal Medical and Chirurgical Society (*Lancet*, June 14, 1879). The ophthalmoscope discloses changes in the optic discs of about 80 per cent. of the children who die of tubercular meningitis. These changes fall under one of two heads—viz., optic neuritis or distension of the retinal veins alone. As the discs vary physiologically in different individuals and even in the same person, the two are often not alike; progressive change is better evidence than can be obtained from a single examination. In a small proportion of cases the optic changes occur very early in the course of the disease, and enable a diagnosis to be made when the symptoms are equivocal; this is the case when the meningitis is seated chiefly about the optic commissure. But the ophthalmoscopic changes are an important factor in the diagnosis in a much larger number of cases. The two forms of disc change—viz., the optic neuritis and distension of the veins—appear related respectively to meningeal inflamma-

tion and pressure. The intracranial pressure may result from excess of ventricular or of subarachnoid fluid, and gives evidence of its presence in the anæmia of the cranial contents. The palsy of the limbs is mostly found on the side opposite to that hemisphere of the brain which presents that greatest meningeal affection. No such definite relation exists with regard to the optic discs. In many cases of tubercular meningitis which run an indefinite course, especially those which are secondary to some other advanced disease, the optic changes share the indistinctness of the other symptoms. The ophthalmoscope countenances the idea that some cases of tubercular meningitis recover, and even in fatal cases a temporary improvement may occur in the discs. Tubercles of the choroid appear to be an uncommon complication.

Dr. COUPLAND confirmed from his own experience the statement as to the rarity of choroidal tubercle. In upwards of five years at the Middlesex Hospital he had not met with it more than four times, two cases occurring in 1874 being recorded by him in the Path. Soc. Trans. This did not bear out Cohnheim's belief as to the frequency of choroidal tubercle in general tuberculosis.

Dr. GOWERS testified to the extreme exactness of Dr. Garlick's observations, which proved how much could be learned by careful and continuous observation from day to day. Many depended too much upon a single examination, but Dr. Garlick had shown that the progressive changes were a chief feature in the diagnosis. His observation as to the distension of the optic sheath with subarachnoid fluid confirmed Graefe's statement that the optic neuritis of tubercular meningitis was always descending, a statement which has been disputed by many. It was true that Cohnheim's observations have not been confirmed in this country, but Cohnheim himself stated that choroidal tubercle occurred less frequently in connection with cases of tuberculosis with meningitis than in those without it.

Dr. BARLOW also bore testimony to the value of the careful and continuous observations of Dr. Garlick, and the truth of the fact stated that it was necessary to watch the cases from day to day in order to arrive at just conclusions. The separation of the changes into two distinct forms was a considerable advance. Dr. Barlow thought that the mechanical theory of optic neuritis would have to be abandoned, and that the condition should be looked upon in the light of affections of homologous tissues, the retina being only a prolongation of the brain. The great frequency of softening of the brain-substance in tubercular meningitis, as compared with simple meningitis, pointed to changes in brain-tissue itself in the former disease. He had specimens of six cases of tubercle of the choroid; and he would be inclined to associate the choroidal affection with the disease of the pia mater, and the optic neuritis with cerebritis.

Mr. PARKER asked if there was a history of injury in each of the cases of recovery. In all the instances of recovery from so-called "tubercular meningitis," injury had been the starting-point. Dr. Barlow's remarks interested him, because for some time he had thought that cases of tubercular meningitis should more properly be styled "cerebritis." In microscopical examination of one case he had found both brain and spinal cord the seat of extensive small-celled infiltration, without any marked change to the naked eye.

Dr. GARLICK, in reply, said there was a history of slight injury in one of the cases of recovery, but too much weight should not be placed upon histories of injury. In the other three there was no such history; in one there had been previous otitis.

Acute Meningitis Treated by Doses of Iodide of Potassium.

M. RODET records, in the *Lyon Médical*, 1878, No. 52, the case of a young girl aged 19, suffering from very acute meningitis (fever, vomiting, delirium,

sleeplessness, outcries, dilated pupils). The treatment was by antispasmodics and sedatives. At the end of two days, her state was aggravated with loss of consciousness, obstinate constipation, and monoplegia of the right upper limb. Death seemed imminent. The use of antispasmodics was continued, and there was further prescribed a flying blister to the nape of the neck, and three *grammes* of iodide of potassium (equal to forty-six grains and a half), in twenty-four hours. The next morning there was a slight amelioration, especially in the intellectual condition; the same state of paralysis. A purgative enema produced abundant evacuation. The improvement made sensible progress; the paralysis began to diminish on the third day of the employment of the iodide of potassium; on the eighth day it had completely disappeared, and the patient was convalescent. The treatment was continued. The iodide was carried on the first day to as high a dose as four *grammes*, on the third to five *grammes*, and continued at that dose up to the eighth day, and then progressively diminished. This case deserves attention in respect to the successful treatment of so severe an affection as acute meningitis. M. Rodet follows his report by mentioning a certain number of cases cured by iodide of potassium, and cites the opinion of Fonsagrives. He lays great stress on the largeness of the dose of iodide of potassium.—*British Medical Journal*, June 21, 1879.

Treatment of Epilepsy.

Dr. A. HUGHES BENNETT, Physician to the Hospital for Epilepsy and Paralysis, Regent's Park, records (*British Med. Journal*, June 7, 1879) an analysis of the results of treatment of one hundred cases of epilepsy by the bromide of potassium or ammonium. The following he finds a convenient and efficacious prescription: R. Potassii bromidi gr. xx; ammonii bromidi gr. x; spiritus ammon. aromat. ʒss; aquam ad ʒj. Fiat haustus ter in die sumendus.

The first dose was taken before getting out of bed in the morning, the second in the middle of the day on an empty stomach, and the third the last thing at night. If, in the course of a fortnight, the attacks continued, the dose was increased week by week, till there was some obvious modification in their severity or frequency; and this has been, if required, gradually increased to from sixty to ninety grains, three times a day. In the event of the first or any subsequent dose proving efficacious in warding off the seizures, it was continued for about a couple of months; that is, assuming no really dangerous signs of poisoning presented themselves. The fact of the bromide rash or moderate constitutional weakness being developed was found of no great importance, if the attacks were in abeyance. At the end of from two to three months, according to circumstances, the dose was gradually diminished, till the smallest possible amount necessary to materially modify the paroxysms was found; and this, when ascertained, was, the health remaining good, continued for many months.

Of the hundred cases treated in this way, it may be stated in general terms that, with only one or two exceptions, the bromides have had the effect of materially modifying the frequency and severity of the epileptic seizures. At the same time, opportunity was not afforded in all of these to test the efficacy of the treatment for a sufficient length of time.

Not only do the bromides materially modify the frequency of epileptic attacks, but they often diminish the severity of those which occur. They also improve in many respects the general health, and persons who suffered from headache, nervousness, and other ailments, are often greatly relieved in these respects.

The administration of the drugs may arrest the seizures for many months, and the moment they are discontinued, the attacks at once return, indicating that it is

these agents which keep the paroxysms in abeyance, and that their action is not permanent.

What effects has a prolonged use of the bromides on the general health? Of the forty cases, which for a period of at least six months were continuously under the influence of these drugs, the following gives a general idea of the result.

In 62.5 per cent. of cases, the prolonged use of the bromides, sufficient to ward off or greatly modify the epileptic attacks, did not produce any physiological effects, or in any way influence the general health. In 35 per cent., some symptoms of bromism were produced; namely, in 25 per cent., there were weakness and languor of body, loss of appetite, and the usual physical symptoms; in 20 per cent., there were depression of the mental faculties into dulness, apathy, tendency to sleep, and so on; and in 15 per cent., there were well-marked signs of the bromide rash. One patient died while taking large doses, but whether as a result of the remedy or of the disease it is very difficult to determine. As a rule, however, the symptoms of bromism were slight, and their effects very temporary, and rapidly disappeared on discontinuing the drug for a time.

It may be said in conclusion that, in the bromide of potassium, we possess a valuable agent for suppressing the most dangerous symptoms of one of the most terrible maladies to which human flesh is heir, and further experience may enable us, through its influence, to effect a complete cure of the disease itself.

Contributions to the Study of Tuberculous Spinal Meningitis.

CHATEAUFORT, after having summed up the few cases of this special form of tuberculous meningitis which have been published, arrives at the following conclusions (*Thèse de Paris*, 1878): Lesions of the spinal meninges are met with in the majority of, if not in every case of tuberculous meningitis. Generally the cerebral meningitis is the predominant affection, and the spinal meningitis is an epiphenomenon which is seldom recognized; in some cases, however, the spinal accidents precede the cerebral symptoms. From an anatomical point of view, both cases are identical with the tuberculous infiltrations of the coats of the brain, which cause a softening of the convolutions. To these correspond analogous infiltrations which give rise to diffuse or circumscribed myelitis. The following are the symptoms which have been most frequently observed in this affection; disturbances of the sensibility, characterized by radiating pains, cutaneous hyperæsthesia alternating with disseminated anæsthetic spots. At the same time, or a little later, there occur motor troubles, spasms, and contractions, ultimately succeeded by paresis or true paraplegia. As in cases of paraplegia due to transverse myelitis, we here meet troubles of micturition, retention or incontinence of urine, constipation, or *escharæ*. Although it is often very difficult to discern in the course of tuberculous meningitis to what extent the brain and spinal cord are affected, still it is possible in some cases to be sure of the existence of granulations on the spinal marrow, and in almost every case to suspect it. Tuberculous spinal meningitis has no peculiar etiology, nor does it differ from cerebral meningitis in its evolution; it is almost always accompanied by cerebro-spinal tuberculosis. Hitherto this affection does not seem ever to have been cured; it is, however, probable that spinal meningitis, as well as cerebral meningitis, may be arrested in its development.—*London Med. Recovd.*, June 15, 1879.

Curative Influence of Mania on other Bodily Disturbances.

SNELL quotes a case of severe icterus (*Allg. Zeitschr. f. Psych.*, xxxv., p. 446) in which the patient, who was almost reduced to a hopeless condition, rapidly

recovered, after having gone through an attack of acute mania. These attacks were repeated three times, and every time left the patient stronger and better than before. The author has observed similar curative effects of maniacal excitement in a series of chronic affections, such as the initial stage of phthisis pulmonum, chronic disease of the liver, gout, rheumatism, digestive troubles, and different functional nervous troubles. This effect cannot be ascribed solely to increased muscular activity, as the patient mentioned above was quite unable to move during the first stage of mania, on account of her extremities being much swollen. The author tries to explain this fact by assuming that nervous power is much increased during those times, as evidenced by the rapid absorption of exudations and similar processes.—*London Med. Record*, June 15, 1879.

Neuropathological Affections.

BERNHARDT publishes the result of his researches during the last two years, on peripheric paralysis, in the *Deut. Arch. f. Klin. Med.*, xxii., page 362. Among the several cases of saturnine paralysis quoted by him, the most interesting are: 1. A typical case of paralysis of the extensor muscles on the left hand of a left-handed patient. 2. A case of affection of the supinator muscles. 3. A case of paralysis in a painter, which might easily have been mistaken for saturnine paralysis. A case of paralysis of the radial nerve is also mentioned which was caused by a violent stretching of the muscles; and a case of paralysis of the ulnar nerve, which came on after typhoid fever. He then quotes a case in which all the nerves of the arm were paralyzed; two cases of paralysis of the sciatic nerve and its branches which followed after a neuritis of the nerve, and goes on to speak of the nature of inveterate serious or cured paralysis of the facial nerve. Concerning the accompanying twitching, which is often observed in old cases of paralysis of the facial nerve, the author strongly opposes Hitzig's views on the subject. Hitzig believes that the division of certain peripheric motor nerves causes a peculiar condition of irritation in corresponding motor parts of the central nervous system. Bernhardt attributes that condition of irritation to a propagation of the stimulus from the nervous centres to the neighbouring ganglionic centres of the other muscles of the same region.—*London Med. Record*, June 15, 1879.

Good Effects of Ammoniacal Sulphate of Copper in Neuralgia of the Fifth Nerve (Tic Douloureux).

Dr. FÉRÉOL, having found several times obstinate cases of neuralgia of the fifth nerve, which had resisted a variety of other means, rapidly and completely cured by the administration of ammoniacal sulphate of copper, reports to the Académie de Médecine (April 1st, 1879) on the subject (*La France Médicale*, April 5th). The first case is that of a strong man, aged 32, who had suffered so atrociously from terrible neuralgic crisis, that on some days he was scarcely free for a few minutes at a time. Six teeth had been vainly extracted, and anti-neuralgic medication exhausted. He then tried ammoniacal sulphate of copper. The amelioration was considerable on the first day; on the second, the patient slept all night for the first time in two months; and, at the end of ten days, he left the hospital cured. A second case of supra-orbital neuralgia in a strong young man, occurring every morning and ceasing at noon, had been vainly treated by leeching, blistering, and full doses of quinine. The ammoniacal sulphate of copper, given in a dose first of all of 0.10, and then 0.15 centigrammes daily, produced an immediate amelioration of pain, and the patient described himself as cured. The medication was continued for a week, and the neuralgia did not return. Similar effects were obtained by M. Féréol in a lady aged 43, delicate, nervous, but not

hysterical, suffering from persistent right hemicrania, with atrocious pain in the fifth pair of nerves, which drove her almost wild, and for which she had vainly tried quinine, aconite, morphia, hypodermic injections, etc. Similar results were obtained in an old man, aged 60, suffering for eighteen months from a horribly painful neuralgia, starting from the nasal branch of the fifth, and in whom local and general treatment by the oldest of anodynes and anti-periodics, had been vainly tried. In this case, the results were not permanent; the patient, having an invincible dislike to the sense of nausea produced by the sulphate of copper. The formula employed is the following: distilled water, 100 grammes; syrup of orange flower or peppermint, 30 grammes; ammoniacal sulphate of copper, 0.10 to 0.15 centigrammes, to be taken in the course of twenty-four hours, especially during food, in order to avoid irritating the stomach. In one patient, the dose was raised to 60 centigrammes a day without any other inconvenience than slight gastric pain, and a little diarrhœa. The medium dose was 0.10 to 0.15 centigrammes, which should be continued for from ten to fifteen days, even after the complete disappearance of the pains.—*Lond. Med. Record*, June 15, 1879.

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Case of Co-ordinative Disturbance of the Muscles of Speech.

AUFRECHT reports (*Deut. Med. Woch.*, February 22, 1879) the following case:—

M. L., joiner's apprentice, had become overheated turning a grinding stone in a stooping position, when suddenly a stream of cold water was poured from a pipe above him over the back of his head and neck. Half an hour later he noticed that he could no longer speak. A few days later he came with his mother to consult the author. She stated that the lad had always been well, with the exception of measles and scarlet fever, which he had in his infancy, but that she herself had suffered from repeated attacks of melancholy, which lasted each time about five months. She had, however, been well for the last three years. The patient is 17 years old, well built and fairly nourished, no abnormal conditions can be detected in any of the vital organs; he swallows well, the tongue is protruded without any deviation to the right or left. When asked to speak, he makes the following remarkable efforts to utter a word. He opens his mouth wide, so that the lower lip protrudes over the lower dental arch, the tongue is thrust forth so that its tip touches the mucous membrane of the under lip, and squeezes between the latter and the dental arch of the lower jaw, assuming, at the same time, a more convex shape. Simultaneously, both the sterno-cleido-mastoid muscles contract and jerk the head forwards; both they and the whole of the dorsal surface of the tongue are very hard and rigid to the touch in such moments. Not before all these movements have been accomplished simultaneously, the patient utters the required word. He tells his whole history in a clear and lucid way, but has to go through the same manœuvres at every word, or sometimes after two or three words. When asked to count if possible without stopping, he does not get beyond number six; but, between the numbers, the mouth is kept open, the sterno-cleido-mastoid muscles remain contracted during the whole of the time, and the head is thrust forward.

He was treated with bromide of potassium, and a blister applied to the neck; eight days later, he had so far improved as to be able to speak more coherently, and, though the above described symptoms still occurred after several words, the action of the muscles was less energetic than before. Four weeks later he was able to speak without the least apparent abnormality; but when asked to count without stopping to take breath, he would go on till eighteen, then stop to draw a long breath, and execute the same manœuvres with the head and tongue though only slightly. If, however, told to inspire frequently while counting, so that

wind does not fail him, no disturbance ever occurs. A fortnight later he was dismissed from treatment as being quite well, and has remained so ever since.

Two similar cases have come under observation before; one is quoted by Panthel in *Deutsche Klinik*, 1855, p. 451; and the other by Fleury in the *Gaz. Hebdom.*, Nos. 15, 16, April 14, 20, 1865. Panthel's case was a boy of 12 years who fell down in a swoon at his father's funeral, and, when restored to consciousness a quarter of an hour later, was unable to speak. All his other functions were perfectly normal. This state lasted three days, and, during the whole of the time, whenever the boy attempted to speak, the muscles of the pharynx, which are innervated by the hypoglossus, were in a state of continual vibration, which only lasted as long as the boy had the intention to speak. If the muscles were compressed externally, the spasm ceased, and the boy was able to speak as long as the compression lasted. A fortnight later, the same state recurred after a slight fright and lasted two days; also, a few weeks later, when it passed over after a few hours.

In Fleury's case, the patient was a man aged 33, who had had one tonsil extirpated. This operation was followed by serious disturbances of sensibility and the sense of taste, aphonia, congestion of the brain, and epileptiform fits; at the same time, he had lost the power of speech, whenever he attempted to speak, his tongue would curve upwards, pressing on the palate, and there remain immovable. There was no affection of the tongue or lips, as he could smoke, whistle, etc. Neither was his intellect affected in any way; he could read, write, etc., and communicate with his surroundings by means of a pencil and writing tablets. After fifteen months of antiphlogistic treatment he regained the power of speech, but he remained epileptic.

Reflections.—It is clear from the history of the case that the muscles of speech could not have been affected; the lesion, therefore, was confined to the nerves which innervate them, the hypoglossus and the accessories. The term lesion is too strong to be used here, as we cannot speak of an anatomical lesion as occurring either in the origin or the course of the nerve, because, if this were the case, the nerves would be incapable of working their respective muscles, and we see that here the functions of the latter were in no wise disturbed. It is difficult to find a satisfactory explanation for this curious phenomenon. The author's theory is that, through some unknown agent, the roots of the hypoglossus and accessories, which exercised every effort to articulate the word ready in the brain, were so extensively excited that instead of inducing speech they impeded it, causing what might be termed ataxy of the speech.—*Lond. Med. Record*, June 15, 1879.

Hyperæsthesia of the Pharynx and Larynx.

GANGHOFNER gives an account of eight cases of purely nervous hyperæsthesia of the pharynx and larynx (*Prag. Med. Woch.*, 1878, Nos. 38, 40). They are mostly such as come often under the notice of specialists, and are a source of much trouble and annoyance both to them and their patients on account of their pertinacity. In by far the greater number of the cases, even the most scrupulous examination failed to detect any anatomical cause by which to explain the troubles; in others, there were minute pathological affections, small erosions in the pharynx, etc., which were, however, too insignificant to account for the sufferings of the patient. In a few cases, Ganghofner observed other nervous troubles, such as cardialgia, neuralgic pains, etc., nervous dysphagia, and œsophagismus.

The troubles caused by the disease are a feeling of burning, pressure, pricking, and dryness in the pharynx or larynx, sometimes in both organs at once; at the same time, the patients sometimes complain of a feeling as if their throat were

being forcibly compressed, or as if they had a foreign body in the throat; in some cases, the pain extends as far as the tip of the nose or the tongue. If the larynx is affected, spasms of the glottis occasionally ensue, or a purely nervous spasmodic cough without any expectoration; the latter sometimes as often as thirty or forty times daily, but, as a rule, not quite so often. These phenomena are either persistent, or they only appear periodically, and are then provoked by much speaking, irritating food, or mental emotions.

Among the 24 cases observed by the author were 15 female patients and 9 male, averaging in age from 8 (boy) to 57 years. The etiology of this affection is not clear. It has often been ascribed to anæmia, but anæmia did not exist in every case. It was generally preceded by inflammation of the organs of the throat, simple anginas, etc. It often occurs in hysterical patients, but has also been met with in cases where no other hysterical symptom was manifest. The author has frequently observed that several individuals in the same family have successively been affected by it, so that he is inclined to think that there may be a hereditary disposition to this affection. Affections of the genital organs also seem to have some influence on its development.

Ganghofner discriminates two forms of the affection—one due to a continuous irritation of the peripheric terminations of the nerves in the mucous membrane, and another purely central, and not caused by any external influence. In treating this affection, it must always be borne in mind that there is a great tendency to frequent relapses, and that it is a very stubborn disease. The treatment consists in cold baths, sea-bathing, change of air, milk cures, mountain air, etc., or in the use of the galvanic current. Painting the throat with solutions of bromide of potassium, tannin, glycerine, morphine, inhalations of weak solutions of salt, etc. In some cases, it will be found advisable to give bromide of potassium internally, or even to administer hypodermic injections of morphia.—*Lond. Med. Record*, June 15, 1879.

Retro-Sternal Suffocative Goutre.

M. DUPLAY recently (*Gaz. des Hôp.*, May 6 and 8) delivered at the St. Louis a clinical lecture on this subject. A woman, fifty-eight years of age, had observed for more than twenty years a small indolent tumour at the right side of her neck just above the sternum. About six months ago, while still continuing indolent, the tumour rapidly increased in size, and gave rise to such difficulty of respiration as to induce her to come to the hospital. When admitted the tumour was found to be about the size of an egg, and covered by the infra-hyoidean muscles. It was not adherent to these and the skin, but some prolongations which extended into the mediastinum had contracted adhesions. It was hard and without fluctuation. It participated in the movements of elevation and depression of the larynx, but this organ as well as the œsophagus was unaffected. Great dyspnoea was induced without any exertion, and even without this the respiration was considerably embarrassed. The tumour was pronounced to be due to an enlargement of the right lobe of the thyroid gland. On account of the age of the patient, and family antecedents, the tumour was deemed to be possibly scirrhus; but cancer supervening on slight hypertrophy of the thyroid of so many years' standing is a rare occurrence. The uniform solid consistency of the tumour, and especially its absolute indolence, also militated against the idea of malignancy, as cancer of the thyroid is remarkable for the severity of the neuralgic pains which extend to the cervical region and to the arms. The woman, moreover, was in good health and not emaciated.

The disturbance of the respiratory organs observed in suffocative goutre may depend upon different anatomical conditions. The gland, in place of being situated at the anterior part of the neck, may embrace the larynx and trachea like a

ring, so that when it exerts fibrous retraction consequent on hypertrophy, the laryngo-tracheal tube may become constricted as by a ligature. But this is a rare occurrence. Another form, of which this patient seems to offer an example, and which is described as *goître plongeant*—internal goitre, or, more properly, retro-sternal goitre—is sometimes very difficult of diagnosis, in consequence of the whole of the tumour being placed behind the sternum. But ordinarily, as in the present case, the tumor is to a certain extent apparent above the sternum and sterno-clavicular articulation, sending a prolongation behind the sternum. It may be asked how so small a tumour, and so little fixed and immovable, can give rise to such serious functional disturbance by the compression it exercises on the neighbouring organs; and, in fact, in small retro-sternal goitre this is a phenomenon somewhat difficult of interpretation, even with the aid of an autopsy. The most probable supposition seems to be that, when the goitre is situated quite at the upper extremity of the thorax, it tends, by virtue of a kind of aspiration which takes place at the moment of inspiration, to insinuate itself into the anterior mediastinum, where, opposed by the sternum as a barrier, it presses on the trachea, producing permanent disturbance of respiration, which is increased when the respiratory movements are multiplied. This disturbance may suddenly acquire great gravity, and even prove rapidly fatal. But this accident, instead of being attributed to the production of congestion of the glottis, as it sometimes has been, is more probably due to the compression exerted either on the recurrent nerves, especially the right, or on the pneumogastric itself.

The prognosis of the affection is of great importance. In this case, in which the tumour only determines moderate dyspnoea, the patient may yet be carried off very rapidly, without the tumour having increased in size, or having undergone any modification whatever. A vivid moral emotion might determine a suffocative paroxysm, although such a termination is a rare one. What is more common is to find the dyspnoea progressively increasing, and then, after awhile, to see suffocative paroxysms supervene, which, after having recurred a certain number of times, finish by proving fatal. And even if the suffocative paroxysms are delayed, we may find, if the tumour continues to increase, other functional disturbances produced in connection with the œsophagus, the vessels, or nerves.

Before speaking of the treatment which should be adopted in these cases, Dr. Duplay cautioned his hearers against the dangers which result from a too ready surgical intervention in tumours of the thyroid body. Whatever the diagnosis may be that has been formed, these affections must not be meddled with until absolutely forced to it by the progress of the disease or the instances of the patient. Slight as the operation may be that is performed in this region—even a simple puncture with the exploratory trocar—the patient may be killed by it. Of this M. Duplay has seen numerous instances. In the present case, in which the accidents have not acquired a very great intensity, general treatment may be first tried, this consisting chiefly in the employment of preparations of iodine. Most excellent results are obtainable from these in young subjects, and when the affection has been treated by them from the first. When the symptoms become more menacing, surgical interference must be resorted to. Some surgeons, especially Bonnet, regarding the dyspnoea as due to the constriction produced by the infra-hyoidean muscles, have divided these, but with no satisfactory results. Another operation by Bonnet, which sometimes succeeds, consists in the displacement of the thyroid and cauterization. The object of this operation is the raising the tumour and the prevention of its exercising compression on the trachea during the aspiration which accompanies inspiration. Bonnet passed three or four solid pins under the skin immediately behind the sternum, transfixing the corresponding portion of the hypertrophied thyroid, and brought out the points of the needles

on the opposite side, curving them so as to fix the tumour in a permanent manner. To maintain it thus he applied the Vienna caustic, which destroyed the skin, subcutaneous cellular tissue, and even a small portion of the tumour. During cicatrization, cohesion took place between the hypertrophied thyroid and the integuments. The interstitial injection of tincture of iodine, without being more dangerous than the preceding method, has the inconvenience of inducing primary inflammatory augmentation of the dimensions of the tissues before their eventual retraction can be secured. The removal of the thyroid, heretofore reputed so dangerous an operation, has been revived in England, Germany, and America with considerable success, the mean mortality only being one in three.—*Med. Times and Gaz.*, June 28, 1879.

Atelectasis Pulmonum.

After a very thorough critical review of the different hypotheses which have prevailed on the etiology of acquired atelectasis, LICHTHEIM details his own experiments (*Arch. f. Exp. Path. and Pharm.*, Band x, and *Prager Med. Woch.*, March 26, 1879). They were undertaken in accordance with Traube's directions, with the exception that the author replaced the rolls of paper used by Traube for the purpose of stopping up the alveoli by small tents of laminaria, which he introduced into a bronchus through the tracheal wound, as he considered them more effectual in keeping out the air. After the operation, the circumscribed portion of the lung was found to be quite atelectatic, the animals dying in the course of the following twenty-four or forty-eight hours with all the symptoms of acute dyspnoea, which had set in immediately after the operation, and was owing to the acute compensatory inflation of the remainder of the lung, which in some cases even caused pneumothorax by the bursting of some alveoli.

In a second series of experiments, where one of the bronchi was ligatured in the pleuritic cavity, the animals lived longer, the lung was atelectatic, presented inflammatory changes, and was imbedded in a layer of tough pus.

For the purpose of elucidating the question whether the air contained in a portion of the lung which had thus been circumscribed could be absorbed by the blood or not, Lichtheim ligatured the corresponding pulmonary artery and veins. He thought that absorption could only be carried out as long as the circulation remained uninterrupted, but he was disappointed in finding that, twenty-four hours after the operation, the lung had increased in size, and contained a great quantity of frothy serum, slightly tinged with blood. The blood could only have penetrated into the lungs through the branches which the art. med. pericard. and the art. œsophag. send to this organ. This unexpected difficulty in entirely suspending the circulation in one lung made Lichtheim try another method. He decided no longer to submit the absorbing fluid, but the absorbing gas, to voluntary alterations. This experiment was preceded by another, by which he endeavoured to ascertain the rapidity with which the air was absorbed by the portion of the lung which had been thus separated. He found that the mean time of absorption was about three hours, the shortest time was two and a half hours, and the longest four hours. In a similar way he tried to calculate how much time was needed for the absorption of each of the constituents of the atmospheric air. This was done by introducing a canula into one bronchus of the lung in question, thus bringing the gas which was being experimented with into contact with the lung, while the other half of the organ was left undisturbed. It was then found that the oxygen and carbonic acid disappeared much more rapidly than atmospheric air, and nitrogen much more slowly than the latter, from the circumscribed portion of the lung. In order to explain one of the principal conditions of absorption, viz., the increased tension of the gas during the process

within the separated lung, Lichtheim assumes "that the elasticity of the pulmonary tissue cannot be satisfied until the last air vesicle has been expelled." Lichtheim ascribes the atelectatic condition of the lung which is often met with, both while the organ is still within the thorax and after it has been removed, to an exchange of gas, which takes place through the wall of the alveoli between the air contained in the latter and the outer atmosphere; here the tension of the air in the lungs, which is heightened through the elasticity of the alveoli, plays a most important part.

In the last part of his work the author tries to explain in what way the atelectatic condition of the human lung is brought about. This condition is met with in children suffering from bronchitis, where one portion of the lung is often rendered atelectatic through the accumulation of mucus in the bronchi, and debility of the respiratory muscles; or, in croup, where the bronchi are always found filled with mucus and fibrinous clots at the post-mortem examinations. Lichtheim also classifies under the head of atelectasis that form of the affection which is observed in pleuritic exudations and restricted to that part of the lung which is beneath the level of the liquid. It must, however, be borne in mind, that this is only the case in less voluminous exudations and transudations, where, although the pressure exercised on the fluid can be much lower than the atmospheric pressure, yet the portion of the lung which dips into it is empty of air, tough, not bloodless, but of a dark colour. Here we cannot speak of a compression as we would in the case of exudations that are under high pressure; but this condition of the lung is simply owing to the fact that the air contained in the portion of the lung which is beneath the level of the liquid, can no longer be renewed, as the lung no longer is able to follow the inspiratory movements of the thorax, and it must, therefore, be absorbed.—*London Med. Record*, June 15, 1879.

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On the Pulmonary Complications of Typhoid Fever.

The following are the conclusions to which GUILLETMET has arrived (*Thèse de Paris*, 1878): 1. The symptoms of typhoid fever may be classed under two heads, as derived from congestive or destructive lesions. 2. The congestive symptoms are particularly marked in the skin, the intestines, the brain, the lungs, and in other viscera. 3. The lungs are always congested in typhoid fever. These congestions are not stationary in the first stages of the disease, but may easily be drawn to some other place; therefore counterirritants applied to the skin will always prove useful. 4. Later on the pulmonary congestion is caused by stasis, which frequently originates in degeneration of the heart. 5. The stasis in its turn causes enlargement of the spleen, acute œdema, and bloody infiltration of the lungs. The enlargement of the spleen is complicated with catarrh of the bronchi, which gives rise to the emphysema that is occasionally observed. 7. Inflammation of the lung occurs sometimes, generally in the shape of lobular, lobar, or interstitial pneumonia. 8. True pneumonia is very rare in typhoid fever, it is almost always a pseudo-pneumonia. If true pneumonia, complicated with hepatisation, should come under notice, it will always be on the fourteenth day of the illness, and during convalescence. 9. Tuberculosis has often been observed following in the rear of typhoid fever. 10. The complications of typhoid fever which do not often come under observation, are primitive pneumonia, pleurisy, hæmoptysis without tubercles, pneumothorax, infarcta, and gangrene of the lungs. 11. Primitive pneumonia in typhoid fever is a rarely occurring affection, and it is often difficult to prove that the fever was the primary affection. 12. Pleurisy occurs very seldom without inflammation of the lungs; it generally develops towards the end of the illness or during convalescence. The exudation may be very considerable, and have no tendency to be reabsorbed. 13. Hæmoptysis has

sometimes been observed; it is mostly a symptom of a pulmonary apoplexy, but may also be caused by the patient's having taken cold. 14. Pneumothorax has once come under observation in the course of typhoid fever, though there were no lesions of the lungs sufficiently considerable to explain their rupture. 15. Infarcta have often been found in the lungs of typhoid fever patients. 16. Infarcta are often the cause of secondary inflammations of the lungs of the pleura. 17. Infarcta on a whole originate in the decreasing energy of the cardiac action, through which coagulations form, and thereby give rise to emboli. At other times these emboli come from some gangrenous or purulent part of the organism, when they have a typhoid character. 18. In the same way the gangrenous affections of the lungs may be explained. 19. If an embolus should be thrown into the principal trunk of the pulmonary artery, or into one of its principal branches, death is rapidly caused by asphyxia.—*Lond. Med. Record*, June 15, 1879.

Nervous Dyspnœa in Nephritis.

ORTILLE (*Bull. Général de Therap.*, No. 6, March 30) has divided this interesting pamphlet into two parts. The first is devoted to the clinical side of the question. Dyspnœa is one of the symptoms of uræmia, it occurs in a twofold form: an acute form, characterized by attacks which often cause death, and a chronic form, which is complicated by paroxysms. The former is evidently of nervous origin. The second has been attributed to cardio-pulmonary troubles; this explanation is unsatisfactory, because the intensity of dyspnœa does not depend upon lesions of the heart and the lungs; another explanation given was the asphyctic state of the blood, but the experiments related in the second part of this work, show that the blood is not asphyctic. It results, therefore, that in these two forms of dyspnœa, the nervous element is the principal, if not the only cause of the respiratory troubles. This nervous dyspnœa is recognized: 1. By the frequent occurrence of uræmic vomiting. 2. By the negative results obtained by auscultation of the lungs and the heart. 3. By its intensity. 4. By the constant fall of the temperature. 5. By the presence of albumen in the urine. The following are the therapeutic indications: sub-cutaneous injections of chlorhydrate of morphia will prove useful in paroxysms of dyspnœa; against the uræmic intoxication, the author recommends diaphoretics, especially chlorhydrate of pilocarpine, in subcutaneous injections of 2½ centigrammes, and diuretics, among which phosphate of zinc has proved particularly efficient. In the second part, the author describes his experiments. By cutting out the kidneys in dogs, or by tying their ureters, they were placed in the conditions favourable to the development of uræmia, and all the characteristic symptoms of this affection were subsequently observed in them. The blood of these animals having been analyzed at different times, the results were as follows: It contained a normal proportion of oxygen and carbonic acid, and could, therefore, not be said to be asphyctic; neither could it be the cause of the uræmic dyspnœa. Ammonia was constantly present in the intestines, but not always in the blood; this would prove that when it is found in the blood it is only there secondarily, and not as Frerichs would have it, the cause of uræmic accidents. As neither the amount of urea, nor the excess of extractive matter contained in the blood, suffices to explain the symptoms of uræmia, its explanation must be sought in the state of the tissues. The blood, which has not been sufficiently purified, does not adequately nourish the tissues of the body, the result being a state of starvation, which manifests itself in the nervous system by special functional troubles, such as dyspnœa, coma, delirium, convulsions—in short, all the symptoms of uræmia. The latter, should, therefore, no longer be considered as a laxated state, but as cachexia.—*London Med. Record*, June 15, 1879.

Chondrosis of the Auricle.

An interesting case in veterinary pathology, and which has an important bearing on human physiology, is recorded by Mr. HUGUES in the *Journal de Médecine de Bruxelles*. The right auricle of a horse aged six years was found to be completely cartilaginous, being composed of three pieces of cartilage closely united to one another by fibrous ligaments. The largest had the curvature of the corresponding ventricle, the outer surface being convex and the inner concave; it measured 14 centimetres by 9; the second piece measured 7 centimetres by 4. In no part could any trace of muscular fibres be discovered. The horse died of acute pleurisy, myocarditis, and pericarditis, consequent on a long drive after a journey, and until the commencement of the illness, a few days before its death, it appeared to be in perfect health. Mr. Hugues points out very pertinently that the case strikingly illustrates the passive rôle of the auricles in the action of the heart.—*Lancet*, June 14, 1879.

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A Case of complete Obliteration of the Arteria Anonyma, and nearly complete Obliteration of the Left Carotid and Subclavian Artery, complicated with an Aneurism of the Aorta and Cancer of the Œsophagus.

This title sufficiently indicates the different lesions met with at the autopsy of this case, reported by PREISENDORFER. The patient (*Arch. f. Path. Anat. und Phys.*, vol. lxxiii. page 594), aged 45, had complained chiefly of difficulties in deglutition, owing to a cancer in the œsophagus, from which he died; the other lesions not having caused him any special inconvenience. The physical examination had, however, revealed three suspicious symptoms: dulness of the superior sternal region, a slight bruit along the sternum, and a remarkably small pulse of the upper compared to that of the lower extremities; but still these symptoms were not grave enough to admit of a positive diagnosis, or to lead to suspicion of the remarkable obliterations of the arteries mentioned above. These cases are very rare, and must probably be ascribed either to a congenital vitium or to an obliterating arteriosclerosis. A similar preparation exists in the museum at Cologne, and Riegel also met with a patient who was suffering from the same affection.—*London Med. Record*, June 15, 1879.

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Case of Atresia of the Pulmonary Artery with Atrophy of the Right Ventricle.

RAUB (*Med. Jahr.*, Heft 3, 1878) observed a remarkable anomaly of the right heart in a female child, aged 29 days, who showed symptoms of cyanosis. The right auricle is considerably dilated, the auriculo-ventricular opening is very narrow, and the valves are rudimentary and fixed to the wall of the ventricle. The right ventricle is exceedingly atrophic, and could scarcely hold a small lentil in its cavity. It contains a depression of the size of a millet grain, which is the rudimentary infundibulum. There is complete atresia of the pulmonary artery; and the valves of the latter vessel, which is very narrow at its opening, are only indicated by almost invisible folds. The left auricle is normal, and the ventricle comparatively voluminous. The intraventricular partition exists, the foramen Botalli is of normal dimension; a little underneath is a small opening of the size of a pin's head. The arterial duct springs from the left branch of the pulmonary artery, about 4 millimetres beyond the bifurcation. The most remarkable point in this case is the absence of the lesions which have often been observed coincidently with strictures or atresie of the pulmonary artery. Another fact which deserves to be noticed is the atrophy of the right ventricle. The blood of the

venæ cavæ met with an obstacle on entering the ventricle on a level with the strictured auriculo-ventricular opening; it succeeded in dilating the right auricle thereby penetrating into the left heart through the foramen Botalli. Rokitansky was the first to describe this mechanism, and to show that the inverted conditions produce the dilatation of the right ventricle which is generally met with in atresia of the pulmonary artery.—*London Med. Record*, June 15, 1879.

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The Genesis of the Double Sound in the Crural Artery.

PREISENDÖRFER draws attention (*Berl. Klin. Woch.*, 1879; and *Med. Chir. Rundschau*, April, 1879) to one of the causes of a purely arterial double sound, which has hitherto escaped observation. He noticed it in a man, aged 44, who was suffering from cardiac insufficiency, while the valves of the heart had remained healthy. A regular series of strong pulsations, alternating with weaker ones, could be felt at the radial artery (pulsus bigeminus); the frequency being sixty-four double pulsations in a minute. If the crural artery was auscultated without pressing upon it, a distinct double sound could be heard, which corresponded to the radial pulsations, and changed into a distinct double bruit when the artery was pressed down with the stethoscope. The patient left the hospital after a six weeks' stay, apparently much better, but came back in a fortnight in a very bad condition. The pulse still remained regular, in spite of the increased venous symptoms; but the double sound on the crural artery could not be heard this time. It would result from this observation that a pulsus bigeminus is able to give rise to the phenomenon of double sound in the crural artery, which phenomenon proves that the vascular walls still possess a comparatively normal elasticity, and that the pulsations are still relatively rapid and strong. It is clear that these double sounds may occur in the most various rhythms, and that many cases of double sounds in the crural artery could be explained in the same manner.—*London Med. Record*, June 15, 1879.

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On Thrombosis.

In some lectures given at the Hôpital des Enfants-Maladies, M. BOUCHUT (*Gaz. des Hôpitaux*, March 13, 20, April 3, 1879) dwells on the subject of thrombosis of veins in cachectic and chronic maladies; a subject which he first wrote on in 1844. Instances of this are very numerous; not only do they occur in the lower limbs, but in the iliac veins, the portal vein, the jugular, the pulmonary arteries, the sinuses of the dura mater, and in the right cavities of the heart. The symptoms of this thrombosis of course differ with its seat: thus, in the pelvis, it may cause swelling and pain in the lower limbs; in the vena cava, intestinal hemorrhage; in the brachio-cephalic and the jugular, hæmoptysis. So in the sinuses of the dura mater this cachectic thrombosis produces convulsions in the child and delirium in the adult. M. Bouchut gives a *résumé* of 68 cases in illustration of this last statement, in all of which *post-mortem* examinations were made. He admits with Lancereaux that there are thromboses of inflammatory origin, and those due to retarded circulation; but confines himself to those of the latter class, which he has had an opportunity of observing frequently and carefully in children. The affection begins at the end of acute diseases, and in the course of chronic ones, with sudden convulsions of short duration, or with delirium of a more or less marked kind, announcing the approach of death. Convulsions are seen in these cases up to the age of about seven years; while delirium is met with only in older children and adults. In the 38 observations of final convulsions in children affected with different cachectic diseases, 35 had thrombosis of the sinuses, and three overfilling with blood and encephalitis. The cases occurred

under the following heads. Final convulsions from thrombosis of sinuses, 35 cases; chronic enteritis, 5; measles (catarrhal pneumonia), 2; chronic pneumonia, 5; phthisis, 8; anasarca without albuminuria, 1; chronic albuminuria, 2; whooping-cough and pneumonia, 7; scrofulous cachexia and tubercle of the bones, the lungs, and the intestine, 1; gangrene of the mouth, 1; diphtheria, 2—35. Convulsions, with stases of blood in the sinuses without thrombosis: chronic pneumonia, 1; whooping-cough, 2—38.—*London Med. Record*, June 15, 1879.

On Hysterical Attacks of Gastric Origin.

M. DALLY communicated to the Société de Thérapeutique at a recent meeting (February 12) the following two interesting cases which had come under his observation. The first was that of a young girl who was always taken with paroxysms of hysteriform clonic convulsions during the act of swallowing her food, principally of a solid nature. A slight touch or pressure on the stomach would also invariably cause a paroxysm, which would increase in violence if the pressure was greater. Besides those cases where the attacks were brought on by external causes, he noticed that these phenomena were always in some way connected with the passage of food through the pylorus. M. Dally treated the patient with electricity, applying the constant current to the region of the stomach; this at first brought on most violent attacks, lasting from four to five hours; but the treatment having been continued with the addition of "douches," the patient rapidly improved in health.

In the other case, the paroxysms were less violent, and never lasted more than three to five minutes. The patient was a lad of 13, in whom they also were caused by the passage of food through the pylorus. He was treated in the same way as the girl, and recovered rapidly. Both cases present a great resemblance to each other; perhaps the only difference being that in the girl the paroxysms were evidently of the kind noticed in hysteria major, whilst, in the boy, they resembled the twitching of St. Vitus's dance.—*London Med. Record*, June 15, 1879.

Intussusception of Ileum into Cæcum associated with Polypoid Tumour.

At a late meeting of the Clinical Society of London (*Lancet*, June 7, 1879) Dr. COUPLAND read notes of a case communicated by himself and Mr. HULKE, of Intussusception of the Ileum into the Cæcum through the Ileo-cæcal Valve, associated with a Polypoid Tumour; laparotomy on the fifth day; great immediate relief; death on the seventeenth day. The case was that of a spare, old-looking blonde, sixteen years of age, of highly hysterical temperament, who was admitted into the Middlesex Hospital on March 11, 1879, having been seized the previous day with colicky pains and vomiting. She had just recovered from a similar attack, lasting a few days, and was said to have suffered in the same way some two years before. The bowels had been moved naturally that morning, but no blood had been passed. On admission the paroxysmal abdominal pain was the chief symptom, but there existed a prominent cylindrical swelling in the upper part of the right iliac region, and an area of dullness below this. There was no general abdominal distension, and no constitutional disturbance. The case being regarded as one of fecal accumulation and typhlitis, sedatives were given and enemata administered—the latter without effect. The vomiting, however, continued, being provoked by anything she took. The pain, less severe on account of the opiates, still remained, and no change took place in the swelling or extent of dullness. On the 14th she was obviously weaker, the vomiting was

"bilious" in character, the abdomen more tympanitic. A large soap-and-water injection to the amount of four pints was returned discoloured and with a peculiar penetrating odour. The question of intussusception (between which and the former diagnosis the case had always seemed to lie) was now seriously entertained, and Mr. Hulke was consulted. He found nothing on rectal and vaginal examination, and after a further consultation with Mr. Nunn and Dr. Cayley, it was decided (seeing the patient's critical state) that the abdomen should be explored. Laparotomy was accordingly performed, and Mr. Hulke detected an intussusception of the ileum through its lower end into the cæcum. Reduction being found impossible, the ileum immediately above was secured to the lower angle of the wound and opened. Great relief followed, the vomiting and pain entirely ceasing, and the pulse gaining in force; but thirty-six hours after the operation the patient sank from the peritonitis which was present at the time of operation. The post-mortem examination revealed an intussusception of fully three feet of ileum, through its lowermost six inches and through the valve, the invagination extending for a distance of twelve inches into the colon. The lips of the valve and the surface of the gut included between them were deeply ulcerated; much lymph occurred between the serous layers of the invagination, whilst the central tube was filled with blood-clot, except for its upper three inches, which was occupied by a firm fleshy cylindrical polypoid mass, about the size of the little finger. There was slight general recent peritonitis. The other organs were healthy. The obscurity in the diagnosis, the absence of mælena, the time that elapsed before the symptoms became severe enough to point to complete obstruction, and the fact that the vomiting never became stercoraceous, were dwelt on. It was pointed out that this variety of intussusception was of comparatively rare occurrence. The coexistence of a polypoid growth (it was lipomatous in character), and its situation at that part of the gut which was the last to become invaginated, were also points of interest; the presence of the tumour doubtless preventing reduction as well as hastening the ulcerative process.—Mr. Marsh asked whether there were any cases of fecal obstruction on record producing such symptoms as this case presented; for it was plain that owing to the error in diagnosis much valuable time was lost, and when surgical aid was invoked the case had passed beyond the time when such interference would have succeeded in effecting a reduction of the intussusception. Mr. Hulke had done all that could be done; but it seemed as if physicians should seek for surer signs of diagnosis, so as to call in surgical aid early.

Mr. Bryant said the case was of great interest, but he confessed on hearing it that he felt much as Mr. Marsh did as to the question of diagnosis. It did not appear to him that the symptoms were such as characterize fecal obstruction. The patient was seized with an acute abdominal attack, which subsided and then recurred; and then unfortunately, when the diagnosis was made, Mr. Hulke had but little chance of doing good. The history of the case was peculiar. There was absence of tenesmus or discharge of blood-stained mucus, and possibly this might have led to the discarding the idea of intussusception. The presence of a polypus was very interesting; the invagination was clearly produced by an effort of nature to get rid of the growth. He referred to a preparation in St. George's Hospital Museum, where a growth similarly caused intussusception. He had thought that ileal intussusception through the ileo-cæcal valve was one of the most usual forms; and he remarked that blood was found in abundance in the invaginated gut, and yet did not appear externally.

Mr. Hulke, in reply, said that hemorrhage from the bowel when present was a valuable sign, but he had frequently found cases where there was no passage of blood. When, as in this case, the obstruction and strangulation of the gut are

very acute, he should not expect that blood would have escaped. The wonderful rally the patient made after the operation from her deeply collapsed condition before operation was very interesting.

Dr. Coupland replied that the evidence in favour of intussusception when the patient was admitted was too slight to warrant his calling in the aid of the surgeon. The case lay between that and fecal accumulation with typhlitis, and no one regretted more than he did that in taking the simpler ground he had diminished the chances of recovery from early surgical interference, to the importance of which he was fully alive. At the same time, looking to the extremely strangulated condition of the bowel, and the position of the growth, firmly fixed as it was between the lips of the valve, he doubted if reduction could have been effected even if such interference had been made at the outset. Statistics show that this form of intussusception was by far the rarest of all forms, the commonest being that where, commencing at the valve, the invaginating cæcum drags the ileum after it into the colon.

Simulation of Ascites in Intestinal Obstruction.

Dr. MARKHAM SKERRITT, at a recent meeting of the Clinical Society of London (*Lancet*, June 7, 1879), related two cases to show that dullness in the dependent parts of the abdomen, changing its site with alterations in the position of the patient, which is commonly regarded as the most reliable sign of ascites, may exist when there is no fluid in the peritoneal cavity. The first case, fully reported to the Society on Feb. 14th, was that of a patient admitted into the Bristol General Hospital with intestinal obstruction from what proved to be a plug of fibrinous exudation. When the patient lay on his back there was dullness in both flanks as high as the anterior superior iliac spines; but when he turned on either side the uppermost flank became resonant. Post-mortem, the small intestine was found to be greatly distended with liquid feces and gas, and there was no fluid in the peritoneal cavity. The second case was that of a boy aged sixteen, admitted into the Bristol General Hospital five days after the onset of symptoms of intestinal obstruction. Here also there was dullness in both flanks when the patient lay on his back, and there was resonance in the uppermost flank when he lay on his side. At the post-mortem examination a coil of small intestine was found to be bound down by tough adhesions; the gut above was greatly distended with fluid feces and gas, and there was no fluid in the peritoneal cavity. The following explanation was given of the simulation of the physical signs of ascites in these cases: The gas and the liquid feces in each coil of intestine necessarily obeyed the same physical laws as did the gas-containing intestines and the free fluid in ascites; that is, in each coil of intestine the gas would rise to the top in whatever position the patient lay, and the feces would sink to the bottom; and this was appreciable to percussion on account of the great distension of the individual coils, and also of the large proportion of fluid feces contained in them. According to this theory, when the patient lay on his back the dullness in each flank was the sum of the dullnesses due to the liquid feces in the individual coils, and when he lay on either side the resonance in the uppermost flank was the sum of the resonances produced by the gas in the same individual coils. The existence of this physical sign in the absence of ascites had apparently not been before described, and the fact was of some practical importance, because this source of fallacy in the diagnosis of ascites would be met with in cases where the presence of peritoneal fluid would be of considerable diagnostic value: it would present itself only where there was arrest of passage of feces. This stasis might be due either to a mechanical obstacle or to enteritis or peritonitis simply; and the apparent presence of a small quantity of peritoneal fluid would in such a case be

strongly in favour of the existence of peritonitis, and therefore against the utility of surgical interference. It was therefore necessary to remember that in cases where there was great distension of the intestines with liquid feces, the common physical sign of ascites might exist when there was no fluid in the peritoneal cavity.

Dr. COUPLAND mentioned a case of acute intestinal obstruction (from volvulus due to a Meckel's diverticulum) recently under Dr. Cayley's care in the Middlesex Hospital, where the greatly distended ideal coils were so full of flatus and fluid feces that the signs of peritoneal effusion were present during life.

Dr. TAYLOR asked whether the sign of fluctuation-wave across the abdomen was yielded in these cases; still the shifting of dullness of the flanks from change in position was one of the surest signs of peritoneal effusion.

Dr. SKERRITT replied that no fluctuation-wave was obtained, but that sign was frequently absent in cases of ascites when there was yet sufficient fluid to yield dullness in the flanks.

Gas in Peritoneal Cavity in Typhoid Fever.

At a late meeting of the Clinical Society of London (*Lancet*, June 7, 1879), Mr. G. BROWN read notes of a case of gas in the peritoneal cavity in typhoid fever relieved by puncture. The patient, a young man, aged twenty-one, came under Mr. Brown's care for typhoid fever in October last. The temperature was high throughout, ranging from 102° to 105.2° during the height of the fever. The case was complicated with double pneumonia. In the third week of the fever tympanites developed, at first localized to the intestines, but a few days later the physical signs indicated that gas had escaped from the intestine into the peritoneal cavity, or was being generated in the cavity itself. The distension of the abdominal wall gradually became more and more extreme, the tympanitic note entirely masking the hepatic and splenic dullness, and it could be elicited over the sternum as high as the articulations of the fourth costal cartilages. Through upward pressure on the diaphragm there was urgent dyspnoea, the inspirations reaching as high as fifty per minute, and the heart was displaced upwards and outwards, so that the apex beat was half an inch outside the nipple, and in a line with it. Mr. Brown pierced the abdominal wall with a small aspirator trocar an inch below the umbilicus, and on withdrawing the canula a rush of gas took place, which continued for several seconds. The gas was odourless. The relief was immediate; the heart regained its normal situation, and in a few minutes the respirations fell from fifty to thirty-six per minute. No ill effects followed the operation. The patient succumbed, however, from the lung complications thirty-six hours after. As to the source of the gas, Mr. Brown dismissed the idea of perforation of the intestine on the following grounds, viz.: 1st, the gradual development of the gas in the peritoneal cavity; 2d, absence of symptoms of collapse, which might have been expected had perforation taken place; 3d, the fact that the tympanitic condition of the colon and small intestine was unrelieved by the operation (had the perforation existed, gas would probably have continued to escape into the peritoneal cavity after the operation, but of this there was no evidence, although the patient lived thirty-six hours afterwards); 4th, the fact that the gas was odourless. Mr. Brown advanced two theories as to probable sources of the gas—1st, the gas might have passed by diffusion through the intestinal wall: or 2d, it might have been derived directly from the blood by exosmosis through the delicate walls of the peritoneal capillaries; and this was the more probable from the fact that for several days previous to the distension taking place the blood was highly charged with carbonic acid gas, in consequence of imperfect aeration in the lungs. Mr. Brown said he was unable to decide this

point, and preferred to merely record the case in the hope that other observers would be able to throw more light upon the subject, should similar cases occur in their practice.

Diffuse Inflammation of the Liver from Phosphorus.

In a paper reprinted from the *Deutsches Archiv für Klinische Medicin*, Dr. ANSPECHT describes experiments made upon rabbits by injecting a solution of phosphorized oil (one in eighty) into the subcutaneous tissue of the back. Three milligrammes was the dose thus administered at each injection. Twenty-one animals were experimented upon; and of these, thirteen died after one injection, two after two, three after three, and the rest after four, five, and nine. The conclusion arrived at is this. Phosphorus, or some modification of it produced in the blood, leads to a series of chemical changes in the liver-cells, with the formation of albuminoid granules and fat-grains in their protoplasm, but the liver-cells are not destroyed. If the subject of the experiment do not die in consequence of these changes, then the liver-cells become completely restored. If the phosphorus be administered in too frequently repeated doses, the albuminoid grains and fat-granules are no longer formed, but the cells become pale and glassy, with distinct nucleus, and the interstitial tissue becomes diseased. The changes observed are compared with those which ensue in the kidney when the ureter is ligatured, and are found to be very similar. The conclusion derived from a review of both sets of experiments is that in either case a parenchymatous inflammation is the primary change; that when the obnoxious element causing this, which may be of various kinds, is at work sufficiently long or sufficiently often to hinder the speedy resolution of the inflammation, secondary changes follow in the interstitial tissue, and an intestinal inflammation is started.—*British Med. Journal*, June 7, 1879.

Urinary Phthisis.

TAPRET (*Arch. Gén de Med.*, May and July, 1878) considers urinary phthisis as belonging to the class of affections which Pidoux designated under the name of anomalous phthisis. He thinks that the symptoms by which it shows itself are sufficiently characteristic to enable the practitioner to make a correct diagnosis, and consequently to adopt a rational treatment. So far as regards the etiology of the disease, urinary tuberculosis is essentially an affection of adult age; it seldom occurs in females, but appears in males between the age of 20 and 45. The symptoms present some interesting variations, according as the process is principally confined to the kidneys, the bladder, the prostatic gland, or the urethra.

Primary or Isolated Tuberculosis of the Kidney.—The symptoms of this affection (hæmaturia, albuminuria, pus in the urine, combined or not with polyuria, spontaneous pains, or pains caused only by pressure on the lumbar region) are not characteristic, and might as well be attributed to other renal affections, such as interstitial nephritis, gravel, etc., thus rendering the diagnosis very difficult. The progress of this affection is generally slow, except in cases where the tubercles develop more rapidly, when death occurs generally at the end of a few months. The patient dies of uræmia, owing to the destruction of the renal tissue.

Primary or Isolated Tuberculosis of the Bladder.—M. Tapret thinks that there really exists a tuberculous cystitis, which has hitherto escaped observation, because attention had been principally directed to the kidneys, and the general opinion was that lesions of the bladder occurred only in very exceptional cases or in the last stages of the disease. The characteristic symptoms of this cystitis are: hæmaturia, appearing at an early stage, so-called premonitory hæmaturia, polyuria, which only shows itself at irregular intervals, and owing to divers causes;

pains in the region of the neck of the bladder and a peculiar tenderness of the bladder, the latter being almost always irritable, and in a permanent state of contraction. In the few cases where it has retained its normal capacity, it is sometimes possible, by passing a sound into the bladder, or rectal examination, to feel a hardened spot on the fundus of the organ. This tuberculous cystitis generally progresses very slowly, and ends in consumption or urinary phthisis, unless some local accident should bring on a cachectic state more rapidly.

Primary or Isolated Tuberculosis of the Prostatic Gland.—This embraces two distinct clinical forms of the affection, a rectal or circumferential form and an urethral or urethro-cystic form. The latter presents the symptoms which are generally attributed to cystitis or tuberculous urethritis, pains during micturition, and while the catheter is being used, blennorrhagia, prostaticorrhœa, spasmodic retention of urine. During the latter stages of this affection, fistulas generally form, opening from the prostatic gland into the urethra, the rectum, or the perineum. According to M. Tapret's opinion, all those various symptoms of the presence of tubercles in the genito-urinary organs only acquire importance after the urinary tracts, and especially the neck of the bladder, have been invaded by tubercles. When the neck of the bladder has been reached, the disease assumes a characteristic appearance, which is typical, and may be thus briefly defined. An individual, aged from 20 to 40, who has hitherto enjoyed good health, suddenly sees hæmaturias appear without any special cause, and without pain; these are followed after an interval of time, varying according to the individual, by retention of urine, which, however, is easily overcome; then the desire to micturate begins to grow more and more frequent and imperious. The act itself is very painful; the patient passes, with a great deal of pain and trouble, a few drops of urine leaving a deposit of blood-streaked pus in the vessel. At intervals the urine is more abundant, clear, almost normal (nervous urine), or dusky and discoloured (in deeply-seated diseases of the kidney). There is also blennorrhœa of the deep parts of the urethra; the bladder is either small or dilated, the neck painful, the fundus hardened; no traces of any foreign bodies; the renal region is tender to the touch, and the prostatic gland presents a knotted appearance. The general state of health of the patient remains for a long time satisfactory. His temperature is hardly ever raised or his digestion impaired. The principal complaint is that he cannot stand upright without suffering. The progress of the affection is, though slow, yet sure to be fatal, and death is due either to the urinary phthisis or to a complication with acute pulmonary phthisis. All these phenomena, however, are far from having the same semeiological importance, and the most important are: difficulty in micturition, modifications occurring in the character of the urine, and urethral discharges.

1. Difficulty in micturition. There is frequent desire to micturate during the night, accompanied by painful or painless contractions of the bladder, neck of the bladder and urethra. The character of the pain varies, according to whether it occurs in the intervals between micturating or during the act itself. In the first case the patient complains of a feeling of pressure behind the os pubis, at other times there is a burning sensation, which radiates towards the umbilicus, the perineum, and the rectum, or the pain comes on in paroxysms, like renal colics. The patients are melancholy and despair of improvement. The pain during micturition presents generally the following characteristics.

1. The desire to micturate is accompanied by an intense feeling of pain.
2. The pain is only experienced during the first stage of the act, and dies away later on.
3. The pain is experienced towards the end of the act, when the bladder con-

tracts, to expel the last drops of urine. The patients compare it to a sensation of burning heat and stricture of the neck of the bladder.

Modification in the Character of the Urine.—Here we meet with either hæmaturia, polyuria, or pus in the urine. Transitory hæmaturia originates from the kidneys, persistent from the bladder; if only appearing at the end of the act of micturition, it is due to a lesion of the bladder. It has been observed at different stages of urinary tuberculosis. So-called premonitory hæmaturia often occurs when the patient is apparently in good health, and it is either very profuse or very slight. The author has given them the characteristic name of urethral epistaxis, and attaches little or no importance to them. Later on, the hæmaturia is generally very painful, and not very abundant. The blood is not mixed thoroughly with the urine, and is precipitated on the bottom of the vessel, together with the muco-purulent detritus. Considered from a diagnostic point of view, hæmaturia in this stage may be considered as equivalent to hæmoptysis in pulmonary tuberculosis. Polyuria appears either at an early stage of the disease or towards the end, when the kidney is entirely degenerated. In the first case it is transitory, the urine is pale, clear, and does not contain albumen, but varies much as to quantity and quality. In the second case the urine is thick, whitish, changes colour immediately after it has been passed, and deposits a muco-purulent or bloody precipitate, without, however, becoming any clearer. It is generally called renal urine. The presence of pus in the urine is often one of the first symptoms of urinary phthisis. It often continues unnoticed for months or years, while in other cases the patient happens to notice it by chance. It is not a very favourable symptom, as it proves the individual to be under the influence of some diathesis, which is on the point of manifesting itself more clearly and pronouncedly.

Urethral Discharge.—This symptom only appears when the urethral duct itself has been affected by the disease. If the lesion is situated in front of the anterior sphincter, the discharge is incessant, and may be compared to blenorrhagia, but if the prostatic part is the seat of the affection, the discharge merely consists of a few drops of a muco-purulent fluid, which appear before and after micturition.—*London Med. Record*, May 15, 1879.

Prurigo Formicans.

Dr. HILLAIRET, lecturing at the St. Louis Hospital (*Rév. Méd.*, May 3) on a case of prurigo formicans, occurring in a youth of twenty who had been tormented with it since he was six years of age, observed that he could not agree with Professors Bazin and Hardy in believing that this inveterate form of prurigo is curable. In all the cases which he has met with that have commenced at an early period of life, every means that has been tried has failed in effecting a cure, although temporary alleviation may be obtained. The treatment which he has found most successful in attaining this latter object, although a painful and disagreeable one, succeeds in giving relief, which may last two or three months. It is that employed for the rapid treatment of itch. First, the whole of the body is thoroughly washed with "black soap," and immediately afterwards a prolonged bath is taken. On leaving the bath the patient is thoroughly rubbed with sulphur ointment. Next day the same treatment is repeated. It is then suspended for two days, when it is again put into force for the last time.—*Medical Times and Gaz.*, June 14, 1879.

Surgery.

Surgical Carbolism.

Dr. KUSTER has published in Langenbeck's *Archiv*, vol. xxiii, the results of his experiments on poisoning with carbolic acid. The animals (dogs) were poisoned by injecting the drug into their veins in a few cases by subcutaneous injection. When the first method was used, a dose equalling 0.036 to 0.076 per cent. of the weight of the animal proved fatal. The characteristic symptoms of the poisoning were general muscular trembling, alternating with clonic convulsions, sensory troubles, and high temperature. The latter rose either during the operation, if the acid had been introduced into the system by transfusion, or immediately after, if it had been subcutaneously injected; but varied much according to the dose. If small or medium doses were given, the temperature rose constantly (.9 or 1.8° Fahr.) during the hours following the administration of the drug, and fell the next day. If large doses were administered very gradually, the temperature rose suddenly at first and then sank again: but, if they were given at once, the temperature first sank considerably and then rose. These changes of temperature are regarded by the author as being the characteristic effects of carbolic acid. The symptoms of carbolic acid poisoning in man have been classified in three different stages, according to the severity of the case. In the first stage, often the only symptom of poisoning is the change in the aspect of the urine. In the second stage, the digestion is impaired, the pupils move with difficulty, and the temperature is high. This last symptom is regarded by the author as being almost identical with the fever described by Volkmann under the name of aseptic fever. He explains chronic carbolic acid intoxication by supposing that large quantities of the drug, being repeatedly at short intervals introduced in the system, continually deprive the tissues of sulphuric acid by absorbing it, and thus impoverish them. The third and most severe stage of poisoning is characterized by the well known brain-symptoms. Occasionally, muscular trembling and convulsions have also been observed in man, but only to a slight degree. The following conditions seem to predispose the system to carbolic acid intoxication:—1. Anæmia; 2. Septic and pyæmic fevers, and other weakening agents; 3. Infancy; 4. A peculiar individual idiosyncrasy; 5. The spot where the acid has been introduced into the organism. Husemann holds that it is most apt to produce poisoning when introduced into the circulation, less so if given hypodermically, still less if given in the form of enemata, or rubbed into the skin, or applied to internal surfaces, and finally if inhaled. Sulphate of soda has often been recommended as an antidote to carbolic acid, but Dr. Küster has not found it to answer in severe cases. In order to avoid intoxication, he advises to wash out large cavities with an 8 per cent. solution of chloride of zinc, instead of carbolic acid. A 2 per cent. solution of the latter may, however, be used without danger for children and for operations in the abdominal cavity.—*British Med. Journal*, June 7, 1879.

Phosphaturia in Surgery.

M. VERNEUIL has called attention to the fact that M. Tessier, junior, of Lyons, in his Thesis of 1876, says that he had noted the curious coincidence of various affections of the eye, of cataract in particular, with phosphatic diabetes. He related the history of various phosphaturic patients in whom the extraction of the lens had been followed by disastrous effects; he showed also the influence of phosphaturia on the formation of callus in fractures. These facts had much im-

pressed M. Verneuil, when some characteristic cases came under his notice. In 1877, he removed a small fibroid tumour from a young lady. Struck by the slowness of the cicatrization and the generally bad state of the patient, he recognized, on examination, that she eliminated every day by the urine a considerable quantity of phosphates. M. Tessier had also observed extreme slowness in the formation of callus, after a fracture of the humerus, in a lady also suffering from phosphatic diabetes. M. Verneuil is not indisposed to believe that there exists a certain relation between phosphatic diabetes and the orange-yellow colour of the pus of certain wounds. In 1877, M. Verneuil had in his service a young man aged 17, who had fractured his arm by a relatively slight effort; and this man presented polyuria and phosphaturia. M. Verneuil cites two other cases of affections of bone coinciding with phosphatic diabetes.—*British Medical Journal*, May 24, 1879.

Nystagmic Movements of the Eyes caused by Aural Affection.

Dr. PFLÜGER publishes in the *Deutsche Zeitschr für Pract. Med.*, 1878, No. 35, and *Centralblatt für die Medicin. Wissensch.*, May 31st, 1879, a case of polyp in the ear, complicated with a chronic purulent catarrh of the middle ear, where nystagmic movements of the eyes and tendency to falling invariably appeared when the loop that had been put round the polyp was drawn lighter or even pulled. The author explains this case by assuming that the peculiar movements of the eyes were due to the fact that the irritation was propagated from the polyp to certain peripheric portions of the brain. This assertion is supported by the situation of the polyp, its basis occupying a large portion of the roof of the external roof of the lateral meatus, especially the tegmen tympani, and being immediately in front of the tympanum. Hitzig and Curchmann have proved that there exist in the brain several spots which, when stimulated, cause nystagmus.—*British Medical Journal*, June 21, 1879.

Resection of Several Ribs for Enchondroma.

At the last meeting of the Society of German Surgeons, Dr. KOLACZEK of Breslau showed a woman aged 40, in whom a great part of the left anterior wall of the thorax had been removed by operation, so that a large portion of the lung and of the heart were only covered by skin. The inspiratory and expiratory movements of the lung, and the contractions of the heart, could be seen even at a distance; the contractions of the left auricle and ventricle could be distinctly felt with the hand. The patient was admitted into the hospital at Breslau last year, on account of a tumour occupying the left front of the chest. It was an enchondroma as large as a man's head, and was intimately connected with the ribs, from which it sprang. Extirpation was commenced by a vertical incision over the greater circumference of the tumour. The skin was intact, and was easily dissected off. The ribs were now divided on each side by bone-forceps; the costal pleura, which was intimately adherent opposite the tumour, was of necessity removed. There was thus left in the chest-wall an opening more than a hand-breadth in size, extending from the third to the sixth rib, in which the lung and the pericardium with the pulsating heart lay exposed. The opening was covered with the skin; drainage-tubes were placed in the upper and lower angles of the wound, and a third was introduced into an opening made in the posterior part of the thorax. The operation was done under antiseptic precautions. The pleura was washed out with a two per cent. solution of carbolic acid, and Lister's dressing was applied. The healing process was uninterrupted; and at the end of four weeks the patient was discharged with only a small fistulous opening at the upper

angle of the wound. The lung was remarkably collapsed, so that the integument was drawn in towards the cavity of the chest; it was only when the patient coughed that it rose to the level of the chest-wall. The heart was not displaced. The woman was in good health, and able to work; but unfortunately there was indication of a return of the disease in the end of one of the ribs.—Professor von Langenbeck said that he had met with a similar case. It was one of sarcoma of the thoracic wall. After extirpation, the patient at first appeared to be doing well; but she died at the end of six months. He attributed the death to chronic poisoning with carbolic acid.—*British Med. Journal*, June 14, 1879.

Successful Gastrostomy.

At the recent meeting of the Society of German Surgeons in Berlin, Prof. TRENDLENBERG, of Rostock, showed a boy aged 12, in whom an artificial opening into the stomach had been made on account of stricture of the œsophagus from swallowing sulphuric acid. The case was shown for the purpose of demonstrating the good condition of the lad, and the manner in which he took food. Into the gastric fistula a conical horn cannula was introduced, and this was closed by a common cork. In taking food, the cork was removed, and an India-rubber tube, a finger-breadth in diameter, and long enough to reach the mouth, was introduced into the cannula. The boy took the food into his mouth, and chewed and swallowed it; but, as it could not pass down the œsophagus, it was regurgitated, and was pressed down through the India-rubber tube into the stomach. Dr. Trendelenburg has done gastrostomy in two other cases, for cancer of the œsophagus. One proved fatal in fourteen days; the other in ten weeks.—*British Med. Journal*, June 14, 1879.

Enteroraphy.

In a report of a clinical lecture by Prof. M. SCHEDE (*Deutsche Medicinische Wochenschrift*, No. 19, 1879), details are given of three cases—one of artificial anus and two of fecal fistula, in which, as cure could not be effected through the usual means, the portion of intestine involved in the disease was removed, and enteroraphy performed. This report is of much interest as a contribution to the statistics of an operation to which much attention has recently been directed by German surgeons, and also as describing certain modifications in the operative method, and in the after-treatment, applied by the author in dealing with his three cases. The operative treatment in each case was carried out with strict attention to antiseptic precautions. In two of these cases complete cure was promptly attained. In the third case a favourable progress towards recovery was suddenly arrested through pulmonary embolism.

The subject of the first case was a very feeble woman, aged forty-three, who, three weeks before she came under the notice of Professor Schede, had suffered from strangulation of a femoral hernia on the left side. An operation performed for the relief of this condition had exposed a coil of gangrenous intestine, and resulted in the establishing of an artificial anus. In the left inguinal region was an opening into which the little finger could be passed, and from which there was a constant discharge of fluid feces. No fecal matter was discharged by the anus. There was a free opening into the portion of intestine above the opening in the groin, but neither the finger, nor even a probe, could be passed into the lower segment. After the patient had for two days been subjected to a preliminary treatment, consisting in evacuation of the portion of bowel above the false anus, in exclusive feeding by clysters, and in frequent administration of opium, the following operation was performed: A vertical incision was first made through

the abdominal wall, commencing just above the upper margin of the false anus and carried upwards for a distance of about three inches. The portion of intestine above the opening was then exposed, drawn outwards through the wound, and inclosed temporarily in a stout catgut ligature in order to prevent any flow of intestinal contents during the subsequent steps of the operation. The short piece of intestinal canal between this ligature and the artificial anus having been washed with a 5 per cent. solution of carbolic acid, the upper margin of the outer orifice was cut through and the adhesions of the upper segment of gut were carefully divided. The contracted extremity of the lower segment of gut was then dissected out of a bed of cicatricial tissue and also secured by a ligature of catgut. A wedge-shaped portion of mesentery, corresponding to the interspace between the portions of gut, having been excised, the edges of this membrane were first brought together and fixed by sutures, and afterwards the margins of the two portions of intestinal canal. The catgut ligatures were now removed. These had served their purpose so well that not a drop of fecal fluid had been observed during the operation. Fearing that there might result a failure of uninterrupted primary union between the two applied portions of intestine, and, in order to prevent any discharge of intestinal fluid into the abdominal cavity and consequent fatal peritonitis, Prof. Schede did not at once return the sutured portion of the intestinal canal. The upper and lower portions of the external wound having been closed by sutures, this portion of gut was retained without the middle portion of the wound, and prevented from slipping inwards by a large bent needle passed through the mesentery and the opposite margins of abdominal wall. This exposed portion of gut and the whole seat of the operation were then covered by Lister's dressing. No indications of febrile reaction were manifested during the subsequent progress of this case. The patient vomited soon after the operation, but only once. The dressing was changed on the second day, and again on the sixth day. On the fifth day there was a free discharge of fluid feces by the anus. Subsequently, defecation was regular and normal. On the tenth day the bent needle was removed, and the exposed coil of intestine, then covered by healthy granulations, allowed to fall back into the abdominal cavity. At the end of the fifth week the patient was discharged as cured.

In the second case, a woman aged sixty-two presented a very large irreducible umbilical hernia of ten years' standing. The skin stretched over this swelling was very thin and smooth, and at the most prominent part was a large ulcer, which, at its middle, led down to intestine. Near this ulcer were two small fistulae, through which almost the whole of the fecal matter was discharged, but a very small portion being passed by the anus. As spontaneous cure was not to be expected in this case, Prof. Schede decided on operative treatment. After incision of the thin and tense skin over the hernia, and exposure and careful separation by dissection of the portions of intestine below the ulcer, two provisional catgut ligatures were applied, as in the former case, and about four inches of intestinal canal cut away, together with a wedge-shaped piece of mesentery. The two portions of intestine were then brought together and united by sutures. A large portion of prolapsed omentum, having been tied in three portions, was next removed. The sutured portion was, as in the first case, retained without the abdominal wound by means of a large bent needle. The patient suffered severely from vomiting on the day of operation, and afterwards progressed favourably until the fourth day, when she died suddenly from embolism of the pulmonary artery. At the *post-mortem* examination the edges of the applied portions of intestine were found to have completely and firmly united. The peritoneum was quite free from traces of peritonitis.

The third case was one of artificial anus in a woman aged fifty-eight. This had

resulted from strangulation of a hernia through the linea alba, a little below the navel. It was thought very probable that a portion of jejunum was the part affected, since solid food passed from the artificial anus within one hour after deglutition, and fluids within twenty minutes, the discharged matter being mixed with much unaltered bile. The strength of the patient had been supported by the injection of peptones into the peripheral portion of intestine. A large portion of the feces was discharged at the anus. After unsuccessful trials of all usual means of relief, it was decided to perform enteroraphy. The fistulous opening, which was situated a little below and to the right side of the navel, was included between two curved incisions through the abdominal wall. The knife was then carried upwards and downwards in a vertical direction, so as to enlarge the wound and expose the extremities of the upper and lower segments of intestine. The two portions of intestine were then brought together and united by sutures, as in the first and second cases, but, in consequence of close adhesion of each extremity to the surrounding parts, it was found impossible to draw the sutured coil outwards through the wound. The edges of the incision in the abdominal wall were then brought together and fixed by sutures. This patient made a speedy recovery, and, during the subsequent progress of the case, the temperature remained normal. There was normal defecation by the anus on the fourth day.

The author points out the advantage of temporary deligation of the intestine in the operation of enteroraphy. The proceeding he holds is quite free from danger, and undoubtedly assists the operator and prevents effusion of intestinal contents into the peritoneal cavity and over the raw surfaces. It remains doubtful, he acknowledges, whether any advantage attends the practice of retaining for a time outside the abdomen the sutured portion of intestinal canal. The applied edges of intestine speedily unite by primary adhesion, and effusion of fecal fluid may be prevented through the apposition of other peritoneal surfaces. That the plan is not a dangerous one is proved by the good results in the first case.—*London Med. Record*, June 15, 1879.

Contributions to the Study of Tuberculous Cystitis.

These contributions of GUEBHARDT (*Etude sur la Cystite Tuberculeuse*, Paris, 1878, A. Delahaye) are based on the study of 33 cases of tuberculous cystitis which, for the greater part, were made at the hospital Necker under Professor Guyon. The author holds that there exist two principal classes of tuberculous cystitis: a primary one, which is not preceded by tubercles in any other organ; and a secondary one, which follows immediately upon tuberculosis of the lungs or the genital organs, and hastens the end. The first class can often remain confined for a certain time to the bladder without spreading to the rest of the organism, and then attack either the genito-urinary tract, or any other organ. The author insists especially on the difference between what is termed urinary tuberculosis, and genito-urinary tuberculosis. The latter is often met with, while the former is more rare and localized in the bladder, urethra, and the kidneys, without spreading to the genital organs. At the *post-mortem* examinations, granulations, which are first gray, then yellow, are always found in the bladder, as well as characteristic ulcerations, either isolated or in groups, of various sizes. These lesions always begin at the neck of the bladder, and spread thence into the urethra, the prostatic gland, the ureters, and the kidneys. The pain is sometimes almost excruciating, and often takes the form of neuralgia; other symptoms are urethral and vesical spasms and hæmaturia. Although these phenomena are not pathognomonic, still they may often help towards making a diagnosis in most of the cases. The treatment consists in painting the neck of the bladder with a weak solution of nitrate of silver.—*London Med. Record*, June 15, 1879.

Use of Chloral in a Case of Retention of the Urine.

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in abundance in inflammatory affections, but they should not be confounded with medulla, or with any proliferation or modification of medulla. And the clinical aspect of the case shows the same thing, according to him: there are in ordinary cases two periods—one of acute fever, in which there are no reasons for thinking that the central parts of the bone are affected; and the second period, that of suppuration, in which also the pus is in almost all cases confined to the periosteal and superficial parts of the bone; though there are instances in which the medullary canal is found affected at this period of the disease.

As far as our own experience goes, we think M. Gosselin's pathological and clinical description extremely accurate. As to pathological anatomy, we have had frequent opportunities of proving by dissection that the ordinary acute periostitis of early life does not as a rule affect the central parts of the bone at all, and, in such cases, we cannot support the proposal to trephine the bone (if at least it is proposed to do this at an early stage of the disease), or regard the operation as being in the least degree innocuous. At a later period, when the bone is dead, it would no doubt be safe to trephine it, but it would also be useless. In small bones which have no distinct medullary canal, it is possible that a trephine might give adequate exit to matter; but, in most of such cases, the total removal of the bone or of the part would probably be the more feasible and the more rational step. To trephine a long bone, such as the tibia or femur in an early stage of acute periostitis (as we generally style the disease) would only complicate the case, and, as it would seem, render inflammation of the central parts more probable. In fact in the experience of the present writer, it is only a very small proportion of cases of acute periostitis in which the medullary membrane or medullary canal are implicated, and, when this is the case, the central inflammation is too diffused to be relieved by anything short of extirpation.

We need not say, then, that we differ materially from the opinion expressed by M. Heydenreich in the following words: "We cannot but be struck by this pathological fact that the periosteum, bone, and medulla, present a kind of solidarity when attacked by the same causes of disease, and are generally simultaneously affected, though in different degrees." True as we hold this to be of the periosteum, and the bone which lies directly beneath it and derives its nutrition exclusively from it, it does not seem to us either true or probable with respect to the medulla, which has quite different anatomical and physiological relations. In fact, we have often been struck in examining cases where acute periostitis has run its fatal course rapidly to see how perfectly unaffected have been the central portions of the bone and the medullary canal. Examined later on, these parts will have perhaps perished along with all the rest of the shaft of the bone; but this is obviously only a secondary or incidental result of a disease which at first was quite confined to the superficial facts. The point is a very important one when a proposal to trephine the bone is under discussion.

Acute osteomyelitis, as far as we have been able to observe, is a different affection, caused almost always by penetrating wounds, not amenable to treatment by external incision, as acute periostitis very often is, nor in fact to any known treatment short of complete removal.—*London Med. Record*, June 15, 1879.

On the Treatment of Gunshot Wounds of the Knee-Joint in time of War.

BERGMANN, who was consulting-surgeon in the Russian army on the Danube (*Centralbl.*, No. 18, May 13), had ample opportunity of testing the superiority of the new methods of treating wounds during the war. He confines himself, however, to speaking of gunshot wounds of the knee-joint, which have hitherto yielded very unsatisfactory results. Thus, during the American war, out of 1000

gunshot wounds of the elbow-joint, 194 proved fatal, while 837 out of 1000 gunshot wounds in the knee-joint, were followed by the same result. The author was soon obliged to abstain from a strict antiseptic treatment, as all the conditions necessary to make this treatment successful were wanting; there were hardly any beds to be had, and the wounded lay mostly on the floor. Herr Bergmann therefore restricted himself to the most simple process of antiseptic dressing, using antiseptic material for the purpose of absorbing the secretions of the wound. This was done in the following way: as soon as possible after the wound had been inflicted, the vicinity of the spot where the shot had penetrated was cleansed, then the whole limb was wrapped in a thick layer of antiseptic cotton-wool, the latter firmly pressed down by means of an elastic bandage, and the whole, including the ankle and hip-joint, imbedded in plaster-of-Paris, and allowed to remain undisturbed for a fortnight or more. In some cases the first application of this dressing sufficed to promote the healing of the cutaneous wounds. The author's pamphlet (published in Stuttgart, 1878) also contains two tables of gunshot wounds in the knee; the first contains all the lesions of the knee which were received into the hospitals at Pîtres and Simnitzelli, fifty-nine cases in all, thirty of which were cured, two only after a secondary amputation, five were dismissed with doubtful results as to their being cured, and twenty-four died (44.5 per cent.). This is a by far better result than has been obtained in former wars under much better conditions. If we analyze the cases, we find that out of the twenty-eight cases which were cured without amputation, only in one a considerable suppuration set in, whilst all the others were healed almost without suppuration. Whenever the latter set in, the chances of recovery decreased very rapidly, whether the limb was amputated or not; although it was in nowise strictly limited to the severer wounds. In five cases out of twenty-three which healed rapidly, the capsules had been affected; in several of the other cases, other bones had suffered. Two of the patients who had been cured, died sometime after of intercurrent diseases. At the necropsy, it was found that in one case a fragment of bone had grown into the insertion of the crucial ligaments, and several small pieces of cloth were found in the other patient's wounds. This mode of treatment of smaller gunshot wounds, by keeping the limb immovable, and allowing the wound to heal under the eschar, will be followed by more favourable results if the wound has come under treatment at an early stage, and before the sanguineous infiltrations which have penetrated into the intermuscular connective tissue begin to decompose. The second table contains a list of fifteen cases which were treated in this way, only one of which died of pyæmia (6.6 per cent.). These favourable results speak for themselves, and there can be no doubt, that this method of treatment will hereafter take a prominent place in field surgery.—*London Med. Record*, June 15, 1879.

Ligature of the Ischiatic Artery.

M. TILLAUX related (*Union Méd.*, May 20), at the Société de Chirurgie, the case of a mason, aged twenty, who, having fallen from a scaffold, was brought to the Beaujon in a state of collapse. There was a fracture of the thigh, with a wound, which, however, did not seem to communicate with the fracture. During the first fortnight all seemed going on well, when a very painful swelling became developed behind the great trochanter. There was fluctuation, but neither pulsation nor *bruit-de-souffle* in the tumour; and, under the belief that it was a subcutaneous abscess, a vertical incision was made into it, which was followed by a formidable jet of blood. An aneurism being thus the cause of the tumefaction, a large horizontal incision was at once carried through the gluteus to the ischiatic notch, where the artery was found divided as it left the pelvis. A bony splinter,

apparently proceeding from the edge of the sacrum, and to which the production of the false aneurism was doubtless due, and could be felt. The artery was cut through close to the pelvis, and the hemorrhage instantly arrested by a hæmostatic forceps applied to the central end. This was left *in situ* for forty-eight hours. The patient entirely recovered, *forcipressure* here having been of great service, seeing the difficulty of applying the ligature or torsion. M. Tillaux drew attention to the singularity that so large an aneurism should have remained twenty days without its existence having been suspected.—*Med. Times and Gaz.*, June 21, 1879.

On Nerve-Stretching.

A case of convulsions of the face, which was cured by stretching the facial nerve, is related in No. 40 of the *Berl. Klin. Woch.*, 1878, by Dr. BAUM. The patient, a woman, aged 35, who had previously had a few epileptiform attacks, became subject to convulsive twitchings of the muscles of the left side of her face. They lasted generally for one minute at a time, and were repeated every two or three minutes. Finding that all the remedies used, and even the galvanic current, were of no avail, the author resolved to try whether nerve-stretching would prove successful. He accordingly laid bare the facial nerve near the stylomastoid foramen, and, seizing it roughly with a pair of forceps, he lifted the nerve from the surrounding tissue. The left side of the face was paralyzed for about half an hour, after which sensibility had returned, and the convulsions disappeared. The author ascribes a part of his success to the squeezing of the nerve, and points out that there is no danger of paralysis, as the latter, even if it should occur, is transitory.—*London Med. Record*, June 15, 1879.

Epileptiform Neuralgia, Treated by Nerve-stretching.

Dr. T. GRAINGER STEWART, Professor of Practice of Physic in University of Edinburgh, makes the following remarks (*British Med. Journal*, May 31, 1879) on a case of this kind:—

On returning from my autumn holiday, last year, I found among the patients under treatment, in my department in the Royal Infirmary, one who had been sent up from the surgical wards, suffering from epileptiform neuralgia. He was a man of seventy years, and was employed as a station-master on one of the railways of Cumberland. There was no evidence of hereditary predisposition to nervous disease; he was a temperate man, and his surroundings had been for the most part favourable. In his railway work, he had naturally been somewhat exposed to the weather, and a good deal to draughts, but never in any extraordinary degree. He had been perfectly healthy till the year 1862, when he was seized with facial neuralgia. At first, the pain was of a burning character, and it gradually increased in severity, the paroxysms becoming, as time went on, more frequent and intense, until at last his life was almost intolerable to him; indeed, had it not been for the remissions during which the pain was easier, and the periods of immunity during which he was entirely well, it would have been so. These periods of immunity varied in length—sometimes six weeks, sometimes three months, and on one occasion a whole year; but, sooner or later, the attacks returned, and for six or eight weeks he had little freedom from agony, and never for a moment a feeling of security. The attack from which he was suffering at the time of his admission to my wards had lasted from the end of April, and showed no signs of abatement up to the time I saw him. He was a short man, rather thin, but not emaciated, and said he had lost during the past year about a couple of stone in weight; still there was nothing wrong with him, excepting the neuralgia, and often that was not severe. When a paroxysm oc-

curred, his face would suddenly change; twitching of its muscles on the right side set in, leading to the strangest grimaces; the agony began simultaneously with the movement, and was most intense in the lines of distribution of the middle branch of the fifth nerve on the right side. The patient would seize his head with his hands and press the painful part with the utmost violence; would drive his knuckles into the space beneath the malar bone; would slap his face, tear his hair, twist his body in all directions, and sometimes lose all self-control and shout out in his agony. This would continue for a few seconds, or perhaps a minute or two; then the pain and other symptoms would subside. The paroxysms might recur almost immediately or not for hours; generally, they were most severe in the evening and during the night. They were induced easily by touching the skin or pulling the hairs of any part of the area of distribution of the affected nerve, or by touching the gums or tongue. Mastication had thus become impossible, and all food had to be taken in the liquid form; and no effort was spared, by the use of tubes or other contrivance, to smuggle it past the sensitive region. Nine of the teeth had been extracted in the hope of obtaining relief, but without benefit.

It was clear that the case afforded a typical example of the malady which Trousseau has described as epileptiform neuralgia. No doubt, many of you are familiar with that classical description, and will remember that it includes two varieties: the more common, one in which there is pain without spasm; the more rare, in which pain and spasm coexist.

A few years of practice had sufficed to satisfy Trousseau that the disease was quite different from ordinary neuralgia of the face, and one of the features was its utter incurability. This feature, along with its suddenness of appearance and disappearance, led him to associate it with epilepsy, and to employ the name now in general use. He sketches several cases with his wonted vividness, of which the following may serve as an example:—

"This poor patient had for many years been subject to the convulsive form of neuralgia. His paroxysms lasted sometimes a few seconds only, and sometimes a minute; they recurred whenever he spoke, drank, or ate, or whenever one touched with the tip of a finger the few teeth which he had left. The pain was seated in all the branches of the trifacial nerve of one side, but chiefly in the infraorbital division. Several of the nerve-trunks had been divided already; but the relief had only been temporary, and the pain had always obstinately returned after an interval of from a few weeks to a few months. The extraction of his last remaining teeth gave him no relief. Prolonged applications of a solution of cyanide of potassium did some good; but, the pain still returning, as awful and as unbearable as ever, I decided upon dividing the infra-orbital branch. Bonnet performed the operation with great skill. The patient was relieved instantly, and remained free from pain for several months. The following year, I saw him again, suffering in the same way in the course of another nerve of the face, and with the same convulsions. Professor Roux, as far as I can remember, again divided several nerves. Lastly, in 1841, Dr. Piedagnel saw in his ward at La Pitié this same individual, whom he had known thirty years previously, when house-physician at the St. Antoine Hospital. The poor man's face was scarred from the surgical operations which he had undergone; for, whenever the pain became intolerable, he implored the help of the knife, for this at least gave him relief for a few days, and sometimes a few months."

Our poor patient had like Trousseau's, submitted to many plans of treatment, but with a like want of relief. He had had many teeth extracted, as we have seen; had opium by the mouth, and morphia subcutaneously; had croton-chloral and other sedatives, quinine and iron, all without result; and, after a further trial

of many of these, the question arose whether we should dismiss him as incurable or try yet other remedies. Experience seemed to show that Trousseau's gloomy prognosis was better warranted by facts than the brighter one maintained by Dr. Anstie; and we certainly could not look with hopefulness to any of the ordinary methods. Section of the nerve, or neurotomy, might have been tried; but the advantage obtained in former cases had been merely temporary, the pain reappearing as soon as the nerve had healed, or even sooner, or, even at the best, not being long deferred. Excision of a piece of the nerve, or neurectomy, had not produced results conspicuously better. Neither of these methods, then, commended itself for adoption in this case; but it seemed to me possible that the plan of nerve-stretching introduced by Nussbaum, and which had proved so markedly useful in some similar conditions, might be tried with advantage. My first personal experience of that plan of treatment was in 1876, when a patient was admitted to my wards complaining of various nervous symptoms, and, above all, of very agonizing pain in the line of the sciatic nerve. As none of the sedatives usually helpful afforded any relief, I thought that Nussbaum's plan might be tried; and, after consultation with Professor Lister, it was arranged that he should operate. He did so with the use of antiseptic precautions, and the operation was followed by extraordinary relief. Since that time, it has taken its place in Edinburgh, and has been successfully performed by Mr. Chiene and several other of our surgeons.

In the absence of Professor Annandale, Dr. Bishop, who was in charge of the clinical surgical wards, proceeded on October 22d to operate. With the usual antiseptic precautions, he cut down upon the infra-orbital nerve at its point of emergence from the bone; and, having isolated the nerve, stretched it as vigorously as its size seemed to warrant. In the course of that day, there were several severe attacks, and for some time the pain occasionally recurred; but it speedily abated, and for a month thereafter there was almost complete immunity. At the end of that time, paroxysms recurred; and on November 28th another attempt was made to stretch the nerve. In consequence of the matting of the tissue in the cicatrix, the nerve was cut through, and the parts became anæsthetic for the time. Still the pain continued, and it was soon clear that little or nothing had been gained by the second operation. However, on examining the patient closely, I found that the points of origin and of maximum intensity of the pain were different from what they had been at first; that the pain now mainly originated in the mental branch of the third division of the fifth, instead of in the labial branch of the middle division; and I then regretted that I had not had the mental nerve stretched as well as the infra-orbital.

On December 18th Dr. Bishop proceeded to operate upon it also. The operation afforded instantaneous relief, and from that day to this there has been no return of the pain. Last week, I received a letter stating that he had never had a twinge of pain since the last operation was performed.

Considering that the disease has hitherto yielded to no treatment, it seems that this case is of considerable value. It is true that it is but one case, and the practice may not prove equally successful in others. It is also true that the relief may not prove permanent. It is only five months since the last operation was performed, and the patient has had at least one period of immunity as long during the course of his illness. But it cannot reasonably be doubted that the present immunity is due to the operation; and till evidence turn up to prove its failure, I think the treatment deserves a trial in every such case. Indeed, I would say that, even should the pain recur, the plan of treatment is entitled to take the foremost place among the remedies for the disease. With regard to the operation, there are two points on which I should like to insist: 1. That all the branches

affected should be stretched, and not merely the one in which the disease is chiefly localized; and 2. That, the nerve being grasped, not merely should traction be made upon the proximal part, but upon the distal also, the lip and cheek being seized and pulled downwards while the nerve is held at the point of emergence.

The case affords an illustration of the associated sympathetic or reflex pain. I think we may conclude that after the first operation there was no paroxysm originating in the infra-orbital nerve, but pain was felt there in association with the morbid action in the line of the third division. I have known of a member of the profession getting, as he said, the whole anatomy of the fifth nerve flashed upon his consciousness by the acute pain produced as he was having a nasal polypus extracted; and as there was pain felt in all the branches when the one was irritated, so here the pain was irradiated along the nerves which had so long been the seat of morbid action.

As to the *modus operandi* of the procedure, it is impossible to speak positively; but there is apparently only one condition which such a procedure could relieve, viz., a shrinking or shortening of the nerve from thickening of its fibrous tissue; but whether this be the correct explanation or not, its utility is beyond question.

*On Neuralgia of the Infraorbital Branch of the Trifacial Nerve Cured by
Lücke's Operation.*

The following case was published in the *Deutsche Zeitschr. f. Chir.*, Band xi, Heft 1 and 2, by Dr. AEPLI. The patient, a stonemason, aged 68, had been suffering for fourteen years from facial neuralgia, which he attributed to a violent cold. The pain was principally located in the region of the left infraorbital nerve; it lasted generally from 30 to 60 seconds, and vanished suddenly, to reappear after a longer or shorter interval. The patient's health was generally good. The paroxysms of pain recurred more and more frequently; sometimes ninety times in twenty-four hours, and became so intense, in spite of all the remedies employed, that it was decided to make the resection of the left infraorbital nerve (Wagner's method). The piece which had been excised was four centimetres long, and the sensibility in the region between the eye and the mouth was totally extinct on that side. Eight months later the patient again presented himself, this time suffering from neuralgia of the right infraorbital nerve, the left side having remained free from pain. Neurectomy was afterwards performed on the right side, but the second operation did not prove as successful as the first, as the patient began to complain of the pain two months subsequently in both sides of the face. It was then decided to attempt a third operation, this time by Lücke's method, i. e., temporary resection of the zygomatic bone. In consequence, however, of the previous operations, it was not easy to find the nerve, so that only small pieces could be excised. The wound was treated antiseptically, and a drainage-tube put in; on the fourth day, the patient had a few slight attacks, after which, he was completely cured.—*Lond. Med. Record*, June 15, 1879.

Treatment of Intercostal Neuralgia by Surgical Operation.

The following case was described by Professor von NUSSBAUM in the course of a clinical lecture delivered at Munich in December last, and reported in the *Aerztliches Intelligenz Blatt*, No. 58, 1878. The patient was a gentleman who during a period of twenty years had suffered from severe and obstinate intercostal neuralgia. In the early stages of the affection there had been only occasional attacks at long intervals. Subsequently these attacks became more frequent, and sometimes lasted for months, and finally the patient suffered very severely from neuralgic pains, coming often in the course of each day, and lasting at times for

two or three hours. No relief could be afforded in this case by the subcutaneous injection of morphia. Pressure over the affected region increased the patient's suffering during a paroxysm, but did not excite pain during an interval of ease. The chief seat of the pain was the region between the xiphoid process and the umbilicus; and the patient during each paroxysm suffered from a feeling of constriction around the body at this level.

In consequence of the urgent request of this patient for some therapeutical measure that might possibly give relief, Professor von Nussbaum took into consideration the anatomical conditions of the case in their bearing on the operation of nerve-stretching. The affected nerves were clearly the terminal abdominal branches of the eighth, ninth, and tenth intercostal nerves on each side. It was necessary to find two spots where, without dangerous wounding, these nerves could be exposed and manipulated. The conclusion was finally arrived at that the most suitable wounds for the purpose would be two vertical incisions in the epigastric region, one on each side, and at the distance of a hand's breadth from the outer margin of each rectus muscle. It was regarded as an impracticable operation to reach the affected nerves near the spinal column, and then to expose them to such an extent as to permit the manipulations necessary for stretching.

On November 3d, chloroform having been administered and antiseptic precautions taken, an incision eight centimetres in length was made in the epigastric region on the left side. The soft parts having been divided almost as far as the peritoneum, the three intercostal nerves were exposed. Each nerve was then taken between the thumb and index finger, and then slowly and forcibly stretched. The wound having been closed and covered by antiseptic dressings, a similar incision was made on the right side. Here was some difficulty in exposing the nerves, and in the course of the dissection the peritoneum was wounded. A small portion of omentum that protruded from this accidental wound having been replaced, and the edges of the peritoneum having been brought together by fine catgut, the three nerves were stretched, and the incised parts dressed antiseptically, like that on the opposite side.

During the after-treatment this patient remained free from fever. The wounds were almost quite closed on the twentieth day after the operation, and on the twenty-fifth day the patient returned to his home, having been quite free from neuralgic pains during the whole of this interval. From the last report received from the patient, Professor von Nussbaum learnt that there had been no indications after his return of any recurrence of the neuralgic affection.—*London Med. Record*, March 15, 1879.

Syphilitic Inoculation.

In a lecture upon this subject, delivered at the St. Louis (*Gaz. des Hôp.*, April 8), M. FOURNIER delivered some observations, of which the following is an abstract:—

When a successful inoculation is made, a simple chancre, a special and pathognomonic lesion, is produced, which is easily recognizable at the end of twenty-four or forty-eight hours. It consists of a pustule which, when it has burst, leaves a hollow ulcer with abrupt and incised edges and a yellowish fundus, and is surrounded by an extensive areola, which in a few days may attain considerable dimensions. In relation to diagnosis of syphilis, what is the assistance we derive from inoculation? It renders service to the surgeon by producing the two following results—(1) It enables him to differentiate a simple chancre from a venereal infecting chancre; and (2) to differentiate ulcerated syphilides from simple chancre.

1. *Inoculation serves to distinguish Simple Non-infecting Chancre from Syphilitic Chancre.*—This law reposes on these two considerations—(1) Syphilitic chancre cannot be inoculated on the subject of it; (2) simple chancre can always be inoculated on the subject of it—it is anti-inoculable. Simple chancre is a “strong pus,” as it was formerly called, and takes invariably and indefinitely. Liebmann inoculated himself 2700 times with simple chancre, the last chancres being as positive as the first. In a great number of cases we are unable to diagnose the quality of a chancre. But the diagnosis of chancre is one concerning which patients are in great haste to be assured. Dismayed, they rush in indescribable anxiety to the surgeon, and desire to be informed at once, yes or no, whether they are the subjects of pox. Whenever, therefore, the objective signs do not suffice to inform the practitioner, inoculation will prove useful in giving precision to his diagnosis.

2. *Inoculation serves to distinguish Simple Chancre from certain Ulcerated Syphilides.*—Some ulcerated syphilides are located on the genital organs, and nowhere else; and then risk being mistaken for simple chancres, from the characters of which they are but slightly distinguished. Their differential diagnosis constitutes one of the greatest difficulties in the diagnosis of syphilis, and the question can only be settled by inoculation. Simple chancre will positively reply to inoculation, while the inoculation of syphilides will prove negative; so that, where there is doubt, inoculation should be performed. In some cases it may render the greatest service. A patient came from the country to consult me, who had been under treatment for more than two years for supposed simple chancres, ulceration having “decorticated” the corpus cavernosum. He absolutely denied having had syphilis, and refused inoculation or even an anti-syphilitic treatment. Returning two months later, the ravages of the phagedæna having increased, he consented to inoculation, which, practised on two successive occasions, proved negative, demonstrating the syphilitic nature of the ulcers. He underwent specific treatment, and the ulceration, which had lasted during twenty-eight months, and was continually extending, became arrested immediately, and in two months had undergone complete reparation, the recovery confirming the diagnosis.

Such are the results which are furnished by inoculation, but it supplies no others, and more need not be sought from it. It will remain mute if we seek for the differentiation of the accidents of the primary period from those of the tertiary period of syphilis. The pus derived from the ulcers of either of these periods will always furnish only negative results. But, even so restrained, the results of inoculation have their value, and more than this cannot be exacted.

Practice, Surveillance, and Treatment of Inoculation.—1. First of all, an absolute precept must be laid down. Inoculation must never be practised except in the interest of the patient. It is morally indispensable that it should never be resorted to unless a practical necessity for it exists. It should never degenerate into an experiment in *anima vile*. If it is a mere question of pure science, the practitioner should experiment upon himself, and not upon his patients. 2. Inoculation should only be practised when a serious indication exists, the importance of which renders the operation legitimate. It should be known, in fact, that inoculation is attended with some danger—the danger, in fact, of a simple chancre which may take on an ulcerative and extensive form, and lead to detachment, lymphangitis, erysipelas, and even phagedæna. No doubt such cases are rare, but they are authentic. I have seen and opened, several times, buboes in the axilla consequent on inoculations practised on the arm; and an example is recorded of phagedæna invading the integument of the thigh, and even placing the patient's life in peril. The practitioner is responsible for the inoculation and

the chancre with its consequences that may ensue; and this he should never forget. Unfortunately inoculations have placed some practitioners in most uncomfortable and painful positions. As a general rule, therefore, we must be discreet in its application, only resorting to it when a serious indication authorizes its employment. 3. Inoculation should never be done except with the full and free consent of the patient, who ought to be informed of what we are about to do, the intention of the procedure, and even the dangers that may attend it. I formally condemn inoculations "by surprise," practised on unconscious patients, thus transformed into subjects of experiment. Medical dignity prohibits such unjustifiable procedures. 4. Where should inoculation be performed? The choice of the region is of no great importance, but preference may be given to that of the deltoid. For the upper extremity being less exposed than the lower to fatigue, the danger of bubo is less; the cicatrix is covered by the dress, and, being in the vicinity of the vaccine cicatrices, its nature is not observable. 5. A sharp and grooved vaccine lancet is the best instrument for inoculation, being very superior to the needle, pin, etc. Charged with pus from the doubtful ulcer, without scratching or causing bleeding, the lancet is passed into the skin to the depth of one or two millimetres at the most. It should be directed horizontally, parallel to the surface of the skin, as without this precaution it may penetrate too deeply, becoming dangerous and yet less demonstrative. The inoculation should be protected by covering it with a watch-glass, which is fastened on by several circular strips of diachylon. In this way the pustule is allowed its full development without risk of irritation. When a simple chancre is the result of the inoculation it must be treated and healed as rapidly as possible, bringing it to an end while still small. The best means for this purpose is the application of Ricord's carbo-sulphuric paste, made of such proportions of carbon and sulphuric acid as to allow the mixture to attain the consistence of blacking-paste. A small portion is applied to the chancre and kept on its place by wadding. The paste produces a black crust adherent to the tissues, which slowly dries in two or three weeks. It is very rare for this cauterization to fail in its object. Inoculation, thus practised and treated, is an inoffensive practice, exempt from danger, and one that is authorized for the establishment of the diagnosis, and consequently the prognosis, in doubtful cases.—*Medical Times and Gazette*, June 21, 1879.

Midwifery and Gynæcology.

On the Duration of Life of the Fœtus in Utero after the Mother's Death.

This question has been carefully investigated by C. GAREZKY, in his inaugural dissertation, St. Petersburg, 1878 (and *Wien. Med. Woch.*, No. 22, 1879). He has collected 379 cases, in which the Cæsarean operation was performed after death; 308 infants were extracted dead, 37 showed signs of life, 34 were born alive; but of these, only five remained alive for some time. The author then gives a sketch of Breslau's experiments on animals, and sums his conclusions up as follows. 1. The fœtus undoubtedly survives the sudden death of the mother. 2. If it can be extracted in the course of the first six minutes, it may be born alive. 3. Six to ten minutes after the mother's death, the child may still be alive, though slightly asphyxiated. 4. Ten to twenty minutes after death, the infant is highly asphyxiated. 5. In a great many cases, the infants are either highly asphyxiated or dead after the first minute. 6. The shorter the time is which elapses between the cause of the mother's death and the ceasing of the cardiac

action, the longer the fœtus remains alive. 7. If the mother's death has been caused by some quickly acting poison, the chances for the child's life are greater than when it has been brought on by some other cause.—*British Med. Journal*, June 14, 1879.

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Spontaneous Delivery After Death, with Extrusion of the Uterus.

Dr. OSTMANN relates the following case in the *Vierteljahrschrift für Gerichtliche Medicin*, Band xxviii, p. 228. Madame S., who had been married about five months, was suddenly seized with rigors, headache, and vomiting. For about a week, she had been exposed to ill-treatment by her husband, but she had continued her daily work without appearing to suffer from any particular illness. She died suddenly without having experienced any abdominal pain, and without any symptom indicative of abortion. The body was examined twenty-four hours after death. There was a dark discoloration about the abdomen, which was greatly distended. There was no sanguineous discharge from the genital organs; but, at the time of raising the body to place it in a coffin, it was found that a fœtus, with its umbilical cord and placenta had escaped from the vagina. There were no marks of violence on the skin, nor any appearance of wounds or other injuries internally or externally. Putrefaction was far advanced. Between the labia and the inner surface of the thighs, there was a knuckle of intestine about eight inches long, as well as a membranous sac. The mucous membrane of the vagina was of a reddish-brown colour, and at the upper end the canal was laid open, but there was no effused blood. The uterus was found in the membranous sac above described. It was of a dark color; its walls were thin and soft; and its inner surface had a dirty red colour; at the point of insertion of the placenta, it was of a brownish-red. The fœtus presented nothing unusual in appearance. The genital organs were carefully examined. There was no mark of wounding or other mechanical injury upon them, and there was no effused blood. On these facts, the experts who examined the body came to the conclusion that abortion had taken place after the death of the woman. They concluded that if it had taken place during life, there would have been copious hemorrhage. Putrefaction had taken place with great rapidity; the gases evolved had accumulated in large quantity in the intestines and the cavity of the abdomen. The pressure produced by these gases had caused an expulsion of the fœtus, followed by that of the uterus and intestine. According to the observations of Hoffmann, the pressure produced by the gases evolved in putrefaction is sufficiently great to lead to a rupture of the genital organs and the extrusion of the intestines. The rapid putrefaction of the body had caused in this case, by gaseous pressure, an annular rupture of the uterus and the expulsion of this organ.—*British Med. Journal*, June 7, 1879.

Medical Jurisprudence and Toxicology.

Infanticide: Destruction of the Child During Delivery.

The following case is narrated by Dr. EBERTZ in the *Vierteljahrschrift für Gerichtliche Medicin*, Band xxviii, page 215. A maid-servant, H., became pregnant by her master. The girl slept with her mother, aged 71, who had formerly been a midwife, but had long ceased to practice. She was delivered during the night, but the delivery was kept secret. Two days afterwards, the authorities discovered that the girl had been recently delivered. The dead body of the child was found under the bed; the left arm being separated from the body. An inspection showed that the child had not breathed after delivery, and

that it had died either before or during labour. The skin had a grayish blanched appearance. The left half of the thorax, the left shoulder, and the soft parts about the left arm had a reddish-brown colour. Blood, partly liquid, was diffused in the cellular tissue and in the muscles. The tissues had been cleanly cut in a circular form; the forearm found with the body fitting evenly into the wound. The left clavicle was dislocated. The experts came to the conclusion that death had taken place from hemorrhage. The skin was pallid. There were no cadaveric spots and no patches of lividity, the internal organs were generally pale, the cerebral sinuses empty, and the heart bloodless. The hemorrhage had been caused by a wound of the brachial artery in the separation of the arm by a cutting instrument. No information could be procured of the mode in which the delivery had been effected. The old midwife, who had died five weeks after her confinement in prison, had stated that it was a breech-presentation, that the child had come into the world dead, and with its body in the state in which it was found. The accused, H., admitted that her mother had assisted in the delivery, but that her sufferings were too acute to allow her to form an idea of what she had done. She further stated that an arm had presented itself, and that the body of the child did not pass until about a quarter of an hour afterwards. From these facts, the experts concluded that there had been a presentation of the left shoulder, and that the dislocation of the clavicle proved that there had been very forcible traction of the arm; further, that the tearing off of the arm had been effected during life. This could not have been done by the girl herself, because the arm of the child was in the vagina. The midwife had therefore used criminal violence during delivery, a fact proved by the extravasations of blood in the soft parts. They also inferred that the midwife, finding that a shoulder presented, endeavoured to turn it, and, from ignorance, used undue force by pulling the hand. This led to extravasation of blood and dislocation of the clavicle. It was at this time that the arm was cut off, and after this delivery was accomplished. Dr. Spillman, who reports the case, observes that it is of some importance as showing, in reference to a child which has not breathed and which has not lived after birth, that such violence may be inflicted on it as to cause its death during delivery and while still within the body of the mother. The extravasations of blood in and about the tissues of the shoulder manifestly proved, in spite of the absence of the signs of respiration, that the child was living when this violence was applied to it, and that its death was owing to these injuries. [There can be no doubt of the correctness of this opinion. Although the lungs did not furnish any evidence of life from the establishment of respiration, the evidence that the child was living is sufficiently proved by the condition of the body; this showed that there was a free circulation going on at the time when the violence was inflicted. In England, this case would have been dismissed, as there would have been no proof of the child having been born alive; and without that proof, under the present state of the English law, the destruction of a child during delivery or in the act of birth is not murder. In the above case, the killing of the child appeared to arise more from blundering ignorance than from any intentional act; hence it must be regarded as rather a case of manslaughter than of murder.] —*Brit. Med. Journ.*, June 28, 1879.

Hygiene.

Experiments on Disinfection.

Two sets of important researches on disinfection have been lately going on at Berlin. In both, the test of the efficacy of the particular disinfectant used has

been the effect produced by it either in destroying bacteria and vibriones in putrid fluids exposed to its action, or in preventing their development in a form of "Pasteur's fluid," in which the objects that had undergone disinfection in various degrees were immersed.

The first experiments, those of Dr. MEHLHAUSEN, Director of the Charité Hospital, refer chiefly to the disinfection of rooms in which scarlet fever and other infectious cases have been. The result arrived at is that the most energetic and the cheapest disinfectant is sulphurous acid. Chlorine gas has the disadvantage of destroying clothes and furniture exposed to it, while it is less easy to manipulate, and four or five times as expensive as sulphurous acid. Twenty grammes of sulphur per cubic metre of space destroy, when burnt in a closed room, all bacterial life in sixteen hours. Besides blocking up the doors and windows, Mehlhausen advises that the room shall be previously warmed, if the weather is cold, in order to prevent the gas finding its way into the neighbouring apartments. It is also advisable to damp the floor before lighting the sulphur, so as to profit by the great solubility of sulphurous acid in water. Eight hours is long enough to keep the room shut up after the sulphur begins to burn, and at the end of that time any clothes or bedding in it will be effectually disinfected. Mere free exposure of an infected room to the air by allowing the windows to stay open several days is not enough to disinfect it. This has been practically proved at the Charité Hospital after scarlet fever and measles in several instances.

The second series of experiments were made by Dr. WERNICH, of Breslau, in the chemical laboratory of the Berlin Pathological Institute (*Centralblatt Med. Wiss.*, No. 13, 1877), upon the disinfecting power of sulphurous acid and of dry heat. The method adopted consisted in preparing an "infecting material" by steeping woollen threads, pieces of linen-rag, and cotton-wool, previously proved to be free from atmospheric organisms, in putrid solutions of fæces or meat, and gently drying them. These substances were then tested for their capability of producing bacteria by means of the modified Pasteur's fluid above mentioned, which consisted of distilled water 100 parts, cane-sugar 10 parts, ammonium tartrate 0.5 part, and 0.1 part potassium phosphate. This solution was freshly prepared before each set of experiments, filtered, boiled for half an hour, and immediately poured into the test-glasses and preserved with the usual precautions. To test the effect of disinfection, the wool or wadding, after exposure for a definite time to a definite degree of heat in an oven, or to a measureable volume of sulphurous acid in a bell-glass, was immediately transferred to the Pasteur's fluid, and the efficacy of the disinfectant was estimated by the rapidity of development of bacteria if such appeared, or by their complete absence, as indicated by the fluid remaining perfectly cloudless. It was thus found that 3.3 per cent. of sulphurous acid by volume failed even after many hours to prevent the development of bacteria, but that if the amount of gas reached from 4.0 to 7.15 per cent. by volume of the contents of the bell-jar, and the process had gone on for at least six hours, no bacteria at all developed. On the other hand, while exposure to a temperature of 110° to 118° Cent. even for twenty-four hours failed to destroy the bacterial germs, five minutes' exposure to one of 125° to 150° Cent. invariably succeeded, and the test fluid remained clear even for eleven days or longer. Dr. Wernich specially reminds us that his results must not be taken as applicable to all forms of bacteria, some of which probably require severer measures for their complete destruction. He also points out that it is easier to disinfect wool than linen, and that cotton wadding is the most difficult of all to free from infectious germs.—*Med. Times and Gaz.*, June 7, 1879.

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SEPTEMBER, 1879.

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Anatomy and Physiology.

The Structure of Brunner's Glands.

A few years ago it was generally accepted that the special glands found in the duodenum—the glands of Brunner—belonged to the same type as, and probably subserved functions similar to, the salivary glands and pancreas. They were considered to belong to the type of compound racemose glands until, in 1872, Schwalbe showed that many of them also conformed to the type of compound tubular glands; and now we find M. RENAUT, one of the pupils of Ranvier at the College of France, declaring that none of them partake of the racemose structure, but that all may fall under the head of compound tubular glands. He develops this in a brief article in a recent number of the *Progrès Médical*; and as it involves some facts of interest in histology it may be worth while to reproduce the gist of his remarks in this place.

At the commencement of his paper M. Renaut gives a brief description of an ordinary racemose gland—*e. g.*, the parotid. It consists of a number of polyhedral acini, composed of secreting gland-cells, which empty their contents into an *intralobular* collecting tube from which the acini of a lobule depend like grapes upon their pedicles. These canals are lined by striated cylindrical epithelium containing large oval nuclei, seated on a delicate basement membrane. They open into a series of larger ducts, the *interlobular*, the epithelium of which is often stratified, whilst the wall on which it is placed is more or less lamellated. These tubes in turn open into the main excretory duct, the *inlerlobular*, typified by the ducts named after Steno and Wharton in the salivary glands, the epithelium of which consists of cylindrical and calciform mucus-secreting cells.

Now the duodenal glands do not conform to this acinous type. They may be divided into two groups: the inner or superficial, which are lodged within the *muscularis mucosæ*; and the outer group, which lies in the lax submucous tissue outside the *muscularis mucosæ*. The first group forms a very distinct layer visible beneath the villi and the crypts of Lieberkühn. When closely examined, they are seen to be composed of multifid cul-de-sacs—comparable to much-divided fingers of a glove,—a central canal from which lateral diverticula spring, without any change in calibre, the connective tissue at the point of entrance forming a spur-shaped prominence, so that if deprived of its epithelium the interior of the ramified glandular cavity would present a villous appearance. The surface of a section may present many circular spaces, as in acinous glands; but if the section have traversed the tubes in their long axis, the true character of the diverticula is seen, and the projections at their points of attachment to the collecting tubes are rendered manifest. Each gland-lobule is composed of some fifteen to twenty cul-de-sacs, opening into one another, all lined by the same kind of epithelium. There is no change in type of the epithelium as in an acinous gland; for it con-

sists, in the main tubes as in the branches, of translucent prismatic cells, having flattened nuclei at their bases; they are somewhat columnar, and are filled with mucus, as in the muciparous glands of the œsophagus, bronchi, and pylorus. A protoplasmic process can generally be seen passing from the base of each cell to anastomose with similar processes from its neighbours, forming thus a delicate meshwork on which the cells are seated. There is no subepithelial endothelium, the underlying fixed connective-tissue corpuscles being separated from the epithelial layer by a thin, translucent, non-nucleated membrane. The secondary and tertiary diverticula all open into the same larger collecting tubes, of which the epithelium, although more flattened, has the same mucoid contents. The main collecting tube or duct passes vertically upwards to open by itself on the surface of the mucous membrane at the bottom of a deep linear sulcus, or else opens into a Lieberkühnian gland. In the latter case the transition of the epithelium is very distinct, the character of the Lieberkühnian cells being columnar with striated free border, and granular contents, intercalated with calciform cells. This fact, that Lieberkühn's crypts frequently serve as excretory ducts to Brunner's glands, has not been hitherto noted.

The outer, submucous, or intermuscular group of Brunner's glands do not form a regular series, but are grouped in voluminous lobulated masses, which in general configuration simulate the racemose type. But here, just as with the inner group, they are composed of multifid digitate tubes, but arranged on so complex a plan as to give the appearance of acini when divided transversely; where the section has divided them longitudinally their real conformation is apparent. The excretory tubes passing from this deeper group may receive accessions from the glands of the superficial group on their way through the muscularis mucosæ; whilst some open directly on the surface, others terminate in a Lieberkühnian crypt. From this it will be seen that M. Renaut proves that Brunner's glands pertain all to the compound tubular type, and not to the racemose; he compares their disposition to a fasciculated root, rather than to a bunch of grapes. 'He further believes that these glands are differentiated for the secretion of a peculiar kind of mucus; holding that the absence of any granular material in the cells shows that they do not possess the characters of cells which secrete a special ferment as well as mucus; and he points out that the true mucous glands of the œsophagus and bronchi have a similar fundamental structure. His paper concludes by pointing out the pathological fact that a diffuse papillary growth may conceivably arise in the seats of such glands under the influence of chronic inflammatory processes, the spur-like projections at the points of connection between the cœca and the collecting tubes giving rise to such papillary outbuds. He thinks this is to be very commonly seen at the site of laryngeal mucous glands in the neighbourhood of tubercular or syphilitic ulceration, but it has not been noticed in the duodenum. We may add that possibly the rare occurrence of cylindrical epithelioma of the duodenum may also take its rise in these glands.

M. Renaut's observations have been made on the human subject, and under peculiarly favourable conditions. He has been enabled to remove the first portion of the duodenum from the body of a decapitated criminal, about thirty minutes after death, when the heart could still be made to contract by mechanical irritation. The portions removed were hardened in alcohol, and in solutions of gum and alcohol; and the microscopical sections variously stained with purpurine, picrocarmine, and a new reagent, which he terms "*primérose hæmatoxylique*," prepared by mixing a solution of eosin with hæmatoxylin solution.—*Lancet*, August 2, 1879.

Action of the Succus Entericus in Man.

Dr. BERNHARD DEMANT (*Centralblatt f. d. Med. Wissenschaften*, Feb. 15, 1879) has had an opportunity of studying the secretion and action of the succus entericus in the human subject. The patient, who had been badly operated on for hernia, had a large fistula at the lower part of his small intestine, which was so situated that the alimentary canal was completely divided into two parts; of these, the upper portion communicated with the stomach, whilst the lower part, which secreted the pure juice, terminated as usual in the rectum. With the succus entericus thus obtained, the author has performed many artificial digestions with the following results. The secretion obtained from the intestine of man is a thin clear fluid with a strongly alkaline reaction. Its secretion generally takes place in small quantities; during digestion, however, more is formed than at other times, and at night it ceases to be secreted. Aperients have no influence upon the secretion, either as regards its nature or its digestive power. The succus entericus contains no peptic (albumin digesting) ferment, and it has no influence upon the various forms of proteid materials, such as boiled fibrin and albumen, casein, vegetable fibrin, and legumin. Starch is converted by it into grape sugar; cane sugar is changed into grape sugar. Inulin, however, which has been proposed for diabetic patients as a substitute for bread, is not converted, by digesting with this juice, into grape sugar. Fats containing free fatty acids are emulsified, but neutral fats remain unacted upon. Dr. Demant promises to publish a further account of these important researches into the nature of a secretion which has given rise to so much controversy, in a future number of *Virchow's Archiv*.

Cerebral Localization.

M. BROWN-SEQUARD has communicated to the Société de Biologie of Paris a series of facts in support of his views regarding cerebral localization and of his objections to current theories, and an abstract of his communication has been published in the *Gazette Médicale*. He divided, in a rabbit, the left lateral half of the pons, with the effect of causing complete anæsthesia of the left paw. Dividing then the posterior columns of the cord at the level of the tenth dorsal vertebra—a section which is usually followed by hyperæsthesia of the posterior extremities—he found that the anæsthesia persisted on the left side, hyperæsthesia being present on the right. He then completed the hemisection of the cord by dividing the rest of the left half; on this side the anæsthesia gave place to hyperæsthesia, while the insensibility was transferred to the other. Hence M. Brown-Séguard draws the conclusion that in lesions of the brain the anæsthesia does not depend on the damage to the conducting fibres, but on an influence exerted at a distance upon the spinal cord.

In another series of experiments he divided the right corpus striatum, and in most cases the result was a paralysis of both left limbs. Having then divided the pons upon the same side, the left-sided paralysis disappeared, and a paralysis of the right side came on. Thus the crossed paralysis was replaced by a direct paralysis. Hence he concludes from these facts that identical results can be obtained experimentally for both motion and sensation, and that it is possible, by suitable sections, to transfer the paralysis from one side to the other.

In a third series of experiments M. Brown-Séguard found that if, in a dog, for example, the excito-motor zone of the brain be exposed, galvanization of this region will readily excite movements in the opposite limbs. If then the corresponding half of the pons be divided, the movements caused by galvanization, instead of being lessened, are rather increased, unless the animal is in a state of

syncope. Hemisections of the crus and of the motor regions of the medulla have given similar results with a few exceptions. In an animal in which the right motor half of the pons had been imperfectly divided, the left half of the medulla was afterwards divided. There remained then, as means of communication between the two tracts, only a small portion of the anterior longitudinal fibres of the right side. But in this case galvanization of the motor centres on the right side and on the left produced exactly the same movements in the limbs on the opposite side to the centres galvanized. This experiment, repeated a certain number of times, has always given the same results.

M. Brown-Séquard has promised to furnish soon the complementary proof from experimental lesions of the motor centres. At present he believes himself authorized to declare that a somewhat profound lesion of these centres determines, not a true paralysis, but motor disorders with an alteration of the muscular sense ("pseudo-paralysis"). The complete removal of the motor centre produces the same effect. On the other hand, if this motor centre is removed by an incision beyond its limits, so as not to irritate or injure it, slight functional disorders may be observed during the first few minutes, but even the "pseudo-paralysis" ultimately disappears. These experiments are, we need not say, of the highest importance, and no doubt will receive the attention they certainly deserve.—*Lancet*, June 28, 1879.

Materia Medica and Therapeutics.

The Antifebrile Effects of Cold Enemata.

In the *St. Petersburg Med. Woch.* of June 14, M. LAPIN, one of the internes of Prof. Manassein's clinic, gives an account of the trials that have been made there of cold clysters as an antipyretic means. After noticing the few observations upon the subject which have already been recorded, he gives an account of the fifty observations which he has made in Prof. Manassein's wards. Of these he has published a detailed account in a Russian journal, confining himself in the present communication to a general statement of the results.

Prior to the administration of the clyster the temperature of the patient was taken, while lying on his back, in the axilla, the hypogastric region, and the rectum. The temperature of the litre of water employed varied from 5° C. to 10° C. (41° F. to 50° F.), and Hegar's apparatus at a pressure of two feet was used for the administration. After the water had been discharged the temperature was again taken in the same localities. Of the fifty trials, twenty-six were made on fever patients, twelve on patients with non-febrile diseases, and twelve on persons in health. From these trials the following conclusions are drawn—1. Cold clysters form a practical means of reducing temperature, the influence of which continues for a considerable time. After clysters at 10° C. the temperature scarcely reaches its former height in the axilla for from thirty to forty minutes, in the hypogastrium after an hour, and in the rectum after an hour and a half. With clysters at 5° C. the cooling in the axilla lasts for forty or fifty minutes, but in the hypogastrium and rectum it lasts a much longer time than when water at 10° C. is used, so that the prior high temperature has never been observed to be regained until from two to two and a half hours after. 2. The clysters at 10° C. are well borne in all cases without exception, sometimes leaving behind them a pleasant sense of coolness extending over the whole body. Those at 5° C. are by some just as well borne, but in others they induce unpleasant

sensations in the abdomen. In recurrent fever even shivering may be produced. 3. The depression of temperature is more considerable in cases of fever than in non-febrile affections, and in the healthy. (In the fever patients the fall of temperature varied from 0.60° to 0.40° in the axilla, from 1.50° in the hypogastrium, and from 5° to 1.70° in the rectum. In non-febrile cases it varied from 0.40° to 0.30° in the axilla, from 1.40° to 1.10° in the hypogastrium, and from 1.60° to 1.30° in the rectum. In healthy persons it varied from 0.60° to 0.30° in the axilla, from 1.30° in the hypogastrium, and from 2.60° to 1.40° in the rectum.) 4. Not only is the temperature diminished, but also the number of the pulse and respiration to a small extent. 5. The greatest diminution of temperature takes place in the rectum; next in the hypogastrium, and least in the axilla. 6. An advantage of the cold clysters as an adjuvant of other energetic antipyretic means consists in their fulfilling other indications besides the depression of temperature: *a.* They remove the accumulation of masses of feces, which so frequently occurs in fevers; *b.* They diminish meteorism by contributing to the removal of gases; *c.* In this way they render possible greater freedom in the movements of the diaphragm, and remove a source of self-poisoning of the economy by means of the gases; *d.* To a certain extent, they diminish the afflux of blood to the organs in the vicinity of the rectum, especially the uterus and bladder. 7. Stools follow the use of the clysters at different times in different individuals, varying from a quarter of a minute to two minutes and a half. 8. There can be no doubt that, when a clyster is also indicated in non-febrile cases, the cold clyster should be preferred to the warm in all those cases in which, besides the emptying of the intestine, it is desired to produce a tonic effect on the canal, or to diminish the amount of blood in the pelvic organs.—*Med. Times and Gazette*, July 19, 1879.

Pilocarpine and its Action in Ocular Therapeutics.

GALEZOWSKI'S experiences, confirmed by others, have demonstrated (*Ann. di Opthal. Zunglind*, Ann. 7, Fascic. 4) that pilocarpine instilled into the eye has a myotic action stronger than eserine. He has remarked, also, that nitrate of pilocarpine acts less actively than chloral hydrate. He adds that pilocarpine can be very usefully employed when the prolonged use of eserine has provoked irritation in the conjunctiva. M. Rasupoldi has remarked that every time he has instilled a drop of pilocarpine into the eye of a cat, a very abundant salivation has been produced in about ten minutes. He has seen hypodermic injections of pilocarpine diminish very sensibly the urinary secretions in cases of insipid diabetes. In affections of the iris, or kerato-conjunctivitis, he has obtained very good results by employing either an infusion of jaborandi, or hypodermic infusions of pilocarpine.—*London Med. Record*, July 15, 1879.

Silkworm-gut Sutures.

MR. J. HOPKINS WALTERS recommends (*Medical Times and Gazette*, June 28, 1879) silkworm- or fishing-gut as a material for sutures, its chief excellence consisting in its causing little or no irritation when embedded in the tissues. The way in which the latter tolerate its presence is wonderful, far surpassing either fine silk or silver wire, and, being perfectly soft while contained in moist structures, it remains pliable, admitting of, and participating in, the movements of these, instead of being stiff and resisting like wire. Another valuable quality is its comparative indestructibility, in this greatly differing from catgut, which, after a few hours, becomes completely softened and disintegrated, and finally incorporated with the surrounding tissue.

Fishing-gut maintains its integrity for many weeks, its strength seeming in no

way impaired after removal. Its peculiar structure seems to render it almost as incapable as wire of becoming impregnated with the discharges from wounds which so often make silk injurious, if not absolutely dangerous. When Mr. Walters first used this material he always steeped it for a minute or so in glycerine of carbolic acid, but he has neglected to do so for a long time past and does not find that it makes any difference.

Medicine.

Giuntoli on Acute Rheumatism in Infants.

This affection, strange to say, was entirely unknown to the ancients. It is never mentioned by them in any of their writings (*Lo Sperimentale*, Nos. 11 and 12, 1878, and *Med. Chir. Rundschau*, No. 3, March 1879). In 1837, Berton, speaking of it, says that it is a comparatively rare occurrence; but since his time many authors have given a great deal of attention to the subject. Although it may be said that no age is safe from this affection, still it is seldom met with before puberty, and only in very exceptional cases before the age of five. In England, however, it seems to occur more frequently than in other countries probably owing to the dampness of the climate.

Chomel says that he only met with two cases in infants and seventy-two in adults. Roger is more fortunate in this respect, as he sees on the average twelve cases in infants in a year. The progress of the disease on the whole is about the same as in adults, except that neither the fever pains nor sweating attain the same height; the subacute form is the one most frequently here met with. The disease does not always manifest itself at first by pains in the joints; in a great many cases the prodromi consist in pains in the muscles, a general feeling of prostration, and headache, or a slight angina; this state sometimes lasts for a week or more. The temperature seldom rises beyond 100.4, except in cases of severe complications. The patients suffer a good deal from gastric and intestinal troubles, and from profuse epistaxis; sudamina never appear. Notwithstanding the tendency to delirium peculiar to children, they are seldom delirious except in cases of cerebral-rheumatism. The pains are generally restricted to the joints of the lower extremities, and seldom spread to the hands; in very few cases are they sufficiently severe to prevent sleep. The skin is never discoloured, even if there should be considerable swelling; the number of joints affected varies very much, but the affection very rarely confines itself to only one joint. According to the majority of authors on this subject, the affection seldom lasts longer than 8 to 15 days, which is shorter by a week than in adults; during convalescence the patients are generally very anæmic, and suffer from excessive prostration.

A simple articular rheumatism very seldom ends fatally, except if new complications should arise, but the child, even if once cured, is never safe from new and repeated attacks; it might indeed be said that they are quite the rule. In most cases the heart is also affected, and either remains diseased, or a rheumatic diathesis is gradually developed, which later on manifests itself in a new form with choreiform movements. In some cases even suppuration has been known to occur. Affection of the heart and pleura in rheumatism must never be regarded as a complication, but merely as a spreading of the disease to other serous membranes; the nervous system is also much exposed to rheumatic attacks, evidenced by the frequent cases of chorea and cerebro-spinal meningitis, affections designated by Giuntoli under the felicitous name of visceral rheumatism. That the

heart should remain free is quite an exception, as in three-fourths of all the cases where the heart is not affected from the very first, it is sure to suffer later on.

Another phenomenon which has been observed more frequently in infants than in adults, is that the cardiac affection precedes the articular affection. According to Roger, endocarditis is the most common complication, endo-pericarditis is not quite so frequently met with, and pericarditis still less so. The former is not always recognized in its first stages, as the symptoms under which it generally manifests itself are a slight fever, pains in the region of the heart, and occasionally very severe dyspnoea. Often the only symptom betokening the affection of the cardiac valves, consists in a slight blowing murmur, which is strongest at the apex of the heart, and accompanies the ventricular systole. The prolonged existence of the cardiac bruits is one of the surest diagnostic symptoms by which the organic bruit may be distinguished from the anæmic murmur which so frequently occurs in rheumatism; the former is also always restricted to the base, and does not extend in the direction of the large vessels. As a cardiac complication is not always accompanied by fever, and might therefore easily be overlooked, it is of great importance never to omit making a thorough examination of the heart. Whether ulcerous endocarditis ever occurs in rheumatism has not yet been sufficiently proved. Slight affections of the endocardium often pass away entirely after several months, without leaving any traces (Trousseau); in other cases some pathognomonic symptom appears much later; but frequently the heart struggles painfully for years against the obstacles which exist near the valves. Palpitations and troubles in breathing appear next, and sooner or later, spontaneously or by means of some intercurrent affection or a relapse of rheumatism, the circulation is more and more disturbed, dropsy and other organic diseases appear and multiply, and the patient succumbs often many years after the appearance of primary endocarditis to cardiac cachexia. Bouillaud mentions the case of a woman, aged twenty-nine, in whom the existing cardiac disease was evidently due to an acute attack of rheumatism, which had occurred in her tenth year. Guersant and Bamberger mention other cases which ended fatally after a much shorter duration. Pleuritis has been considered by all authors as a frequent complication of rheumatism. Roger even asserts that he has met with it more often in infants than in adults. Bilateral pleuritis complicated with cardiac affection is considered very dangerous; there is nothing characteristic in its course, as it is often latent and not accompanied by pain. Rheumatic pneumonia is, according to Grisolle, a very rare disease, which he has only observed once in a girl aged seventeen. Fuller says that this complication is more frequently met with, and he accordingly mentions two cases of girls, aged respectively twelve and fourteen; they both ended fatally. Claisse had a boy, aged eight years, under his treatment, who was suffering from a complication of acute rheumatism with endocarditis and broncho-pneumonia; a few days later a second complication arose, in the shape of bilateral pleuritis and pericarditis; but notwithstanding this series of complications, the patient recovered after eighteen days. The nervous system is very frequently the seat of rheumatic manifestations. Cerebral and spinal affections have been observed in children as often as in adults, but the most frequent form under which they manifest themselves is chorea, which is a characteristic symptom of the latter affection in infancy.

Cerebral rheumatism, which Bouchut has never observed, has been met with in children in all the forms which are peculiar to adults. The author reckons among these delirium, which he does not consider as a reflex, but as a diathetic symptom. He also mentions a case in which, two days after the first manifestation of articular pains, opisthotonos and grave cerebral symptoms set in, and death ensued on the fourth day. As a rule, however, this affection always seems

to accompany other complications. Chorea St. Viti has been very frequently met with in rheumatism. Roger regards it as a necessary concomitant of cerebral rheumatism. Trousseau records several cases where cerebral rheumatism and chorea apparently mutually compensated. That both affections should be so frequently combined is a phenomenon peculiar to infancy. A more or less considerable intellectual disturbance has often been also noticed in the course of rheumatism; it varies considerably in duration, and is generally combined with chorea (Griesinger's prolonged form of encephalopathia rheumatica and Mesneti's folie rhumatique). The apoplectic form of cerebral rheumatism is as rare an occurrence as the foregoing one. According to Roger, the prognosis of cerebral rheumatism in children is less unfavourable than in adults, and may even be said to be favourable if chorea or delirium are the only complications which arise. In 1850 Professor Sée was the first to point out the frequent coincidence of chorea with articular rheumatism; to-day no one doubts that they are connected. Trousseau mentions seventy-one cases in which chorea occurred, either together with articular rheumatism or cardiac affections, or alternating with them; he regards both the latter as expressions of the rheumatic principle. In most cases chorea complicates only a more advanced and less severe stage of rheumatism; it appears less frequently in the acme or at the beginning of the disease, and has only been known in very few cases to precede the affection, as noticed by Sée in five cases out of forty-two. At other times it appears only at the second or third attack, and often alternates with the latter.

It is principally the slight and subacute form of rheumatism which is complicated with muscular disturbances, and as if both affections intended to balance each other, the chorea is very slight in grave cases of rheumatism or cardiac affection, while a simple torticollis is often followed by a most serious attack of St. Vitus's dance. Patients, suffering from a complication of rheumatism with chorea, generally present some cardiac disease, either endocarditis or endopericarditis. While Roger looks upon chorea cardiaca and chorea rheumatico-cardiaca as manifestations of a rheumatic diathesis, Giuntoli is of opinion that chorea ought not to be considered as a complication of rheumatism in cases of pale cachectic children, where the cardiac bruits are not restricted merely to the apex of the heart, but extend over the base and the large vessels. He quotes the history of a child of ten, who had chorea and cardiac bruits, although no articular pains had been observed. Two weeks later acute articular rheumatism broke out, which later on was complicated with endocarditis and a relapse of chorea.

The reason why all cases of rheumatism are not complicated with chorea has been ascribed to a disposition which is peculiar to infancy, and especially to girls. It seldom appears in children under eight years, and relapses frequently occur till the twentieth year. A sudden fright is often said to be the cause of it; and, as we have said before, the prognosis is generally a favourable one.

The connection between chorea and rheumatism is not only peculiar to infancy, but can often be traced in hereditary dispositions. Patients suffering from chorea frequently are the descendants of people who have suffered from rheumatism. Sée was able in eight cases to verify this phenomenon in the same family, and Trousseau often predicted chorea in cases of rheumatism. Thus chorea appears as a manifestation of a rheumatic affection of the nerve centres. Fifty years ago Copland opposed the theory that these convulsions were of a reflex character, saying that rheumatism had a tendency to spread from the articular regions to internal fibrous membranes, the pericardium and the pia mater of the spinal cord. Both the pathological anatomy of the disease, as well as the symptoms observed *intra vitam*, tend to affirm the assertion that both affections are connected. So far as the anatomy is concerned, it must be admitted that the *post-*

mortem results have not always been the same, but in every case the cord or its membranes have been the seat of the manifestation. Both chorea and rheumatism, whether they both occur together or separately, always produce the same phenomena; from our present point of knowledge we must still, however, maintain that rheumatism has a strong tendency to attack the nervous system, especially the spinal system, and to produce muscular spasms in individuals who are so predisposed. Still, although a rheumatic chorea exists, and cannot be denied without deliberately refusing to recognize positive facts, yet it would be just as unreasonable and hasty to assert that chorea is merely of rheumatic origin.

So far as other nervous phenomena occurring in the course of rheumatism are concerned, it is still doubtful whether it is in any way connected with contractions or tetanic rigor of the extremities, as the latter are generally met with during the first years of life only, when muscular rheumatism is almost unknown; neither has it as yet been positively proved that it is in any way connected with essential infantile paralysis. Rheumatic, as well as other neuralgias, are very rarely met with in children.

The author never observed a case of erythema nodosum and papulosum, and he even doubts the existence of a purpura rheumatica.

Muscular rheumatism is of rare occurrence in infancy, and Giuntoli has never observed it apart from affections of the joints, so that it should be regarded as a symptom of rheumatism, especially as it often appears in connection with chorea and cardiac affections. The etiology of rheumatism in infants is the same as in adults; perhaps the hereditary predisposition is more pronounced too; *e. g.*, Taccaud says that acquired rheumatism, which is much more frequent than the inherited, generally appears at a more advanced period of life, generally between the twentieth and fortieth year. Chomel even goes so far as to consider rheumatism in children merely as an exceptional phenomenon due to hereditary predisposition. Concerning the question as to whether there is a more marked tendency to this affection in males than in females, or *vice versa*, the various authors differ much in their opinions. Vogel has even discovered a special relation between the age of the patient and the seat of the disease, which he defines as follows: in children the upper extremities, and the organs of the head and thorax are always affected by rheumatism, and the lower extremities and abdominal viscera in adults. This is partly true, as far as the viscera are concerned.

One of the most frequent causes of rheumatism is cold, and principally damp cold; the opinion has for a long time prevailed that scarlatina often produces it also; but as both affections are peculiar to infancy, it has not yet been proved beyond doubt that there really exists some internal connection between them. In the course of scarlatina, the joints often become very painful; this symptom lasts sometimes for one or two days, and then disappears without leaving any traces, while at other times the articulations become inflamed and suppuration ensues. Purulent pleuritis and pericarditis often occur in scarlet fever, but cardiac affections belong to the rare complications. *Endocarditis scarlatinosa* has never been known to end fatally. Trousseau admits the existence of a scarlatinous rheumatism, and points out that scarlatina is often followed by chorea; and Hughes, Ogle, Fuller, Long, and Roger record similar cases. It seems as if scarlatina had the power to rouse the latent tendency to rheumatism in individuals who are under the influence of a hereditary predisposition, without, however, giving to the latter a peculiar *cachet*. The complications of scarlatina have a tendency to suppuration, and that may be the reason why the complications of rheumatism which arise in the van of scarlet fever take the same turn. The relation which exists between both affections is, however, still an open question, which further investigations will doubtless solve. The diagnosis of rheumatism

is easy, but unfortunately slight pains in the joints are too often regarded as growing pains, and too little attention is given to the heart in such cases. Acute attacks of rachitis are apt to produce symptoms not at all unlike those caused by rheumatism; but the extreme youth of the patient, together with the characteristic deformity which soon follows, prevent the error in the diagnosis. Diffuse phlegmonous periostitis often first appears in infancy in the form of rheumatism, as either one or several joints become exceedingly painful; but in this case also the fact that the swelling is either above or below the joint, and never on the joint itself, the general state of the patient and the formation of large purulent foci, help to make the differential diagnosis. Roger draws the attention to the fact that vertebral rheumatism might easily be mistaken for spinal meningitis, seeing that in both affections the patient presents the characteristic position of lying in bed with his head thrown backwards, and his back arched and stiff. He, however, points out that the age of the patient will prevent the mistake in children under three years of age, as rheumatism very seldom occurs before this epoch; and that at a more advanced age, affections of the central nervous system and its membranes would easily be detected by troubles of the motility and sensibility. In no case of chorea must the repeated auscultation of the heart be neglected.

The author strongly advocates the use of opium in rheumatism, in doses of three to five centigrammes every three to four hours, or Dover's powders in doses of from two to six decigrammes. In cases where opium should fail, chloral hydrate and bromide of potassium must be given, and the patient during convalescence be kept under a stimulating and strengthening treatment. It is remarkable that Giuntoli should have entirely overlooked the powerful remedy for rheumatism which we possess, in the shape of salicylic acid, and we are entirely at a loss as to what special reason of the author this neglect should be attributed. Its efficiency is entirely beyond all doubt, and the drug might at least have been mentioned among the others. Cardiac complications are treated by painting the cardiac region with iodine, and applying blisters; bleeding or leeches are only indicated in cases of much pain and dyspnoea. Cerebral symptoms must be energetically treated, by applying leeches to the mastoid processes, and giving large doses of opium and chloral, as well as purgatives internally; but, notwithstanding all efforts, the complication is apt to end fatally. Children who have once suffered from rheumatism must be very carefully protected by prophylactic means from relapses. Cold water cures, mountain air, sea bathing, etc., will prove beneficial in strengthening their constitutions and preventing repeated attacks of the affection.—*London Med. Record*, June 15, 1879.

Transfusion in Acute Leukæmia.

This case occurred in the wards of M. Gubler at the Hospital Beaujon. The patient was a baker's boy, aged 24. He had been ill two months with general malaise and extreme weakness. He was very pale. The spleen and liver were much hypertrophied, and the lymphatic glands in several parts were also large. The blood contained one white globule to five or six red. He was treated with ferruginous tonics, arsenic, and hydrotherapy, but the disease made rapid progress, the spleen augmenting in size with surprising rapidity. Hemorrhages from the nose now commenced, and his eyesight became impaired, and a second examination of the blood showed that there were as many white as red globules. In the presence of this galloping leukæmia, transfusion was resorted to. The brother supplied 100 grammes of blood, and sixty were injected. During the transfusion the patient experienced a feeling of warmth in the arm, then in the shoulder, and

some seconds afterwards he was seized with a dry cough. Five minutes after the operation the pulse was 104° , the same rate as before it, but the sphygmographic tracing showed that the up stroke now approached the vertical. There was an immediate rise of temperature in the axilla from 38° to 38.4° C. He was much improved for three days, when fresh epistaxis occurred, and, desirous of returning home, left the hospital.—*London Med. Record*, July 15, 1879.

Diphtheria treated with Inhalations of Oleum Eucalypti.

MOSLER draws attention (*Berl. Klin. Woch.* May 26, 1879) to the fact that the fatal accidents which are so liable to occur in diphtheria are frequently due to mismanagement. It is a great mistake to go on reducing the organism which has already lost much of its power of resistance by a strict diet, antiphlogistic treatment, and emetics. The latter are especially dangerous in increasing the tendency to failure of the heart's action, and thereby inducing death. The author has obtained very favourable results by submitting his patients to a stimulating and tonic treatment, and thus diminishing the liability to paralysis. Concerning the local treatment of the affection, Herr Mosler is a strong advocate of the views of Waldenburg and Oertel, who have lately pointed out that the use of caustics in the treatment of the local affection is apt to give rise to ulcerations in the throat, and that this danger could be avoided, and equally good results obtained, by inhaling disinfecting substances. The author has made a great number of experiments concerning the efficacy of the different substances which are generally used for the purpose. He has found that the usual disinfectants, such as carbolic acid, salicylic acid, permanganate of potash, etc., are apt to cause symptoms of irritation in the bronchi. A very useful remedy in diminishing the tendency to repeated attacks of diphtheria is a strong solution of sea-salt, mixed with the water which is used for the purpose of inhaling. Herr Mosler has also obtained very good results by adding a dose of the oil made from the leaves of the eucalyptus tree to the water contained in the glass cup of the inhaler. He gives the history of a case which was treated in this way. The patient, a girl, aged 20, was suffering from a severe attack of diphtheria. Both tonsils, the uvula and the arches of the palate, were covered with thick whitish patches. There were also a few ulcerations of irregular form and ragged edges. Inhalations of twenty minutes duration were ordered to be made every hour. Ten grammes of the *ol. eucal. e foliis* was mixed with the same amount of spirit of wine, and ten drops of this mixture added to the water. At the same time she took, every half hour, five drops of a mixture of ten grammes of sesquichloride of iron and the same quantity of water in claret. This treatment was kept up for three days, during which the symptoms remained the same, and the patient had high fever. On the fourth day she became worse; a teaspoonful of the mixture of oil of eucalyptus and spirit was then added to the water, and the inhalation kept up during the night. On the next day the temperature began to sink, and the diphtheritic membranes had been partially expectorated. The patient then continued steadily to improve, and the number of inhalations was reduced to three or four daily. She left the hospital after a stay of three weeks.—*London Med. Record*, July 15, 1879.

Early Syphilitic Affections of the Nervous System.

Prof. MAURIAC closes a long and able paper (*Annales de Dermatol. et de Syphilig.*, vol. x., No. 3) on this subject, with the following deductions from the facts and researches at his command:—

1. Syphilis may attack the nervous centres at a very early period after the initial lesion.

2. The early cerebro-spinal lesions are those which develop during the virulent period of the malady, that is to say, during the first two or three years.

3. There are degrees in this precocity of the cerebro-spinal syphiloses: the first include those which set in within the first twelve months; the second those which develop in the second or third year of the constitutional malady. Statistics seem to show that those of the first degree are more common than those of the second.

4. Among the early visceral localizations of syphilis, those in the cerebro-spinal system are incomparably the most numerous.

5. They are also the most dangerous. Their gravity does not increase with their diathetic age; those which develop during the first months of syphilis are as formidable as those which belong to the more advanced stages of the malady.

6. All the forms, all the degrees, all the phenomenal combinations that constitute the symptomatology and the processes of the localizations of syphilis in the neural system, are met with in the early as well as in the late cerebro-spinal syphiloses.

7. Certain symptomatic complexes, however, seem to predominate. The most frequent are those which consist in an attack of hemiplegia, involving the whole of one side of the body.

8. Among the attacks of hemiplegia, the syndroma comprising the right hemiplegia and aphasia is the most common.

9. The paralytic forms are much more common than the convulsive or epileptic, in the early cerebral syphiloses.

10. In the cerebro-spinal syphiloses the psychical troubles and the incoördinations of movements are never systematized as they are in mania, general paralysis, and locomotor ataxia.

11. The absence of systematization in the cerebro-spinal syphiloses must be regarded as one of their chief characteristics. The only exception is in the case of the syndroma of right hemiplegia and aphasia.

12. Early localizations of syphilis in the spinal cord are much less common than in the encephalon.

13. The lesions which seem to belong to the early cerebro-spinal syphiloses are diffuse or, more frequently, circumscribed hyperplastic effusions into the cortical layer of the brain and the pia mater, and changes in the Sylvian arteries with consecutive ischæmic softening.

14. In some cases of early cerebro-spinal syphiloses that terminated fatally, no lesion was found, but at that time the existence of arterial syphilis had not been recognized. It may be presumed that death had resulted from sudden anæmia of the nervous centres that are essential to life.

15. With regard to the etiology of the early cerebro-spinal syphiloses, only very vague conjectures can be advanced. In most of the cases, the initial lesion as well as the consecutive cutaneous and mucous manifestations were very mild in character.

16. The general cause of the constitutional malady is not modified by the appearance of early localizations in the nervous centres. The other manifestations develop before, during, and after the localization in the neural system, without presenting any deviations from their usual forms, degrees, course, or topography.

17. The precocity of the cerebro-spinal syphiloses furnishes no special indication with regard to treatment. Whatever may be the age of the constitutional malady, the localizations in the nervous centres demand the same specific medication. The peculiar conditions of each case furnish the secondary indications relative to the choice, doses, and combinations of the two specific agents.—*Med. Record*, Aug. 16, 1879.

Spasms of the Phrenic Nerve treated with Ether-spray.

Dr. REGONI reports (*Memorab.*, 5, 1879) the following case: The patient had for eight days previous to his admission to the hospital been suffering from a continuous and very violent hiccough, which he attributed to having eaten a large quantity of vegetables and macaroni. The hiccough had began an hour after the meal, and had increased in violence, so that the patient could neither eat nor sleep, and was very weak. Every attempt to take food, or even water, increased his sufferings, and was followed by bilious vomiting. While examining the patient, the author was struck by the violent and incessant movements of the diaphragm, the thorax being comparatively quiet. The patient complained of dyspnea, and was slightly cyanotic. The stomach was much dilated and tympanitic on percussion. Pulse and heart were normal. The diagnosis, "spasm of the phrenic nerve," having been made, a spray of sulphuric ether was directed for ten minutes, first to the epigastrium, then for five minutes on both sides of the throat. During the *séance* the hiccough decreased in violence and frequency; another application was made in the course of the forenoon, after which the patient slept for two hours. The treatment was repeated several times in the course of this day and the next, and the patient recovered.—*London Med. Record*, July 15, 1879.

Sea Water in Treatment of Chronic Catarrh of the Throat.

Professor MOSLER, of Griefswald, says in the *Berlin. Klinische Wochenschrift*, June 2, 1879, that he has for some years most successfully treated patients with chronic catarrh of the throat by gargling with sea water. Special rooms for gargling have been erected on the seashore in some watering places, according to his directions. It is, however, essential that the patients should be given special directions how to gargle. As the affection is generally located in the naso-pharyngeal space, it is necessary that part of the water should come in contact with the nasal cavity. In order to attain this, the gargling movements must be confined with movements of deglutition. A marked improvement in the state of the patient follows as soon as the latter has acquired this particular art of gargling. Patients who suffer from chronic pharyngitis, and who are exposed to much fatigue through singing, preaching, etc., have been completely cured by gargling twice a day for many months with a tumbler of cold water, to which are added from one to three tablespoonfuls of a twenty or twenty-five per cent. solution of sea-salt. To protect the teeth from the influence of the salt water, they must be cleaned immediately after the gargling with a tincture prepared by the author. Another of the advantages of this method is that the disposition to relapse gradually decreases, especially if the patients be directed to wash their face, neck, and forearms with cold water, and rub them dry before gargling in the morning and at night. After this has been kept up for some time, the mucous membrane of the nasal cavity and the pharynx changes entirely, and the disposition to diphtheria which predominates in certain families is greatly diminished.—*British Med. Journal*, Aug. 2, 1879.

Syphilis of the Trachea and Bronchial Tubes.

VIERLING has collected, *Deutsch Archiv f. Klin. Med.*, p. 326, 1878, 46 cases of syphilitic disease of the air-passages, from which he draws the following conclusions. When syphilis attacks the trachea, ulceration always occurs, and tends generally to cicatrization and consequent narrowing of the tube; but sometimes the ulcer extends so deeply as to perforate the tracheal wall and give rise to an

abscess. In two cases of ulceration of the left bronchus, the left branch of the pulmonary artery was opened. In 30 cases, there was concomitant syphilitic affection of the pharynx; in 36, the trachea was attacked, with or without implication of the bronchi as well; five times the bronchi alone suffered. Bronchial syphilis is rare beyond the two bronchi. Age and sex have no particular influence on the development of the disease. Five or six cases were attributed to hereditary syphilis.

The principal symptoms are cough, purulent expectoration, progressive dyspnoea, and, where the pharynx is also affected, hoarseness, and subsequently, aphonia. The prognosis is most unfavourable. Tracheotomy has been performed in 14 cases of tracheal stenosis, but only twice successfully.—*London Med. Record*, July 15, 1879.

Chancres of the Tonsils and the Buccal Cavity.

M. SPILLMANN has published in the *Revue Médicale de l'Est*, two cases of chancre which are very remarkable, both for the peculiar circumstances attending the infection, and for the difficulty of making a diagnosis.

The first was that of a lady, aged 59, whose position in life was such as to exclude all suspicion of syphilitic infection. She consulted M. Spillmann for a slight sore throat which she had had for about a fortnight, the pain being more violent during the act of swallowing. There was also a considerable swelling of the glands at the angle of the right maxilla. On examination of the throat, a wound of the size of a threepennypiece was seen on the surface of the right tonsil, slightly depressed, and of a grayish hue. The mucous membrane around it was oedematous, and the parotid glands enlarged and tender to pressure. No other lesion could be discovered either in the mouth or throat, nor was there any external redness of the skin. The patient herself did not complain of any particular feeling of ill health, and seemed to consider her disease as a very trifling matter. M. Spillmann, who was well acquainted with his patient's way of living, could not conceive the existence of syphilis; but, a few days later, the characteristic syphilitic rash broke out, so that there could be no doubt as to the nature of the affection. The only difficulty to solve was the etiology of the case, and, after a great deal of trouble, it was discovered that the patient had adopted a baby which she was bringing up by hand, and that, in order to see if the temperature of the milk in the feeding-bottle was right, she often used to try it by drinking from the rubber mouthpiece. The infant being examined, was found to be suffering from hereditary syphilis, with ulcerations of the mouth and the genital parts.

The second case is not less interesting respecting the way in which the infection had been communicated. An upholsterer's apprentice, aged 18, had had for some days previous to his consulting M. Spillmann, a small red patch of the size of a threepennypiece on the lower lip; this patch was indurated at the base, the glands were enlarged—in short, it was an undoubted chancre of the lip. It seemed impossible at first to discover the cause, when it was discovered that the boy used to work with a man who was suffering from syphilis, and took his nails from the same bag as this man. Upholsterers, it seems, are in the habit of putting into their mouths handfuls of the small nails which they use for their work, putting back the surplus nails into the bag. The workman was examined and found to have syphilitic patches in the mouth, and there can, therefore, be no doubt that the boy was infected by putting into his mouth nails which were impregnated with the saliva of this man.—*London Med. Record*, July 15, 1879.

The Etiology of Paralysis of the Cryco-Arytenoid Posterior Muscles.

OTT contributes (*Prog. Med. Woch.*, No. 15, 1879) an interesting case of paralysis of the posterior crico-arytenoid muscles, which was due to pressure of the posterior crico-arytenoid nerves. A man, aged 57, had swallowed a large piece of meat, which had stuck in his throat for twenty-four hours, and resisted all his attempts to dislodge it. He had no pain, only slight dyspnœa, and was unable to swallow even a drop of water. The next day he consulted a physician, who pushed down the piece of meat with a sound. The patient felt better directly, could breathe more freely, and was able to swallow. This state of things, however, did not last long; he again began to suffer from difficulty in breathing and swallowing, and was obliged to take only liquid food. The voice had remained unaltered; but the patient was obliged to speak in short abrupt sentences, from want of air. When examined by the writer, it was found that the false vocal cords were slightly swelled, and red; there was a space of four millimetres between the arytenoid cartilages. The rimi glottidis was partly covered by the vocal cords during inspiration and expiration; only an irregular triangular opening could be seen at its posterior end. The left vocal cord was wider than the right, and did not move at all, while the right moved sluggishly. During inspiration, the vocal cords were approximated. The arytenoid cartilages did not move either during respiration or phonation. The mucous membrane of the incisura inter-arytenoidea was swelled and pale, and the colour of the vocal cords a dingy yellow. The treatment consisted at first in faradization of the larynx, but it afforded no relief to the patient. The dyspnœa increased, and became most severe even when the patient was perfectly quiet. It was noticed that the rima glottidis had become much narrower, the left vocal cord having advanced to the middle of the fissure; the right arytenoid cartilage was partly hidden by the left. As the patient could only swallow with difficulty, it was necessary to feed him through the tube. He lost his appetite, and was very much wasted, and reduced in strength. At last the dyspnœa became so intense, that tracheotomy had to be performed, to save the man's life. Immediately after the operation, the patient was able to swallow without any trouble, and continued to do so henceforth. The larynx presented the same changes as before the operation. The patient had still great difficulty in breathing; the thorax was immovable during respiration, and the intercostal spaces were drawn in. The vocal cords were immovable, and during phonation a space of about three millimetres remained open in the back part of the fissure. For this reason, the patient had to be dismissed with the canula in his throat, to prevent asphyxia. The author attributes the paralysis of the muscles which open the glottis to the pressure which the large piece of meat that was firmly wedged in the pharynx during twenty-four hours, must have exercised on the crico-arytenoid posterior muscles and their nerves. His assertion is based upon the well-known fact that the conducting function of a nerve is entirely destroyed by pressure. Thus, in the present case, the nerve having lost all control over the muscle it governs, the latter became paralyzed, and gave rise to the phenomena we have described. The difficulty in swallowing, which increased whenever the dyspnœa became worse, decreased when the sound was introduced, and finally disappeared after tracheotomy, can only be explained by assuming the existence of a spasmodic stricture of the œsophagus.—*London Med. Record*, July 15, 1879.

Agaricum in the Night-Sweats of Consumptive Patients.

Professor PETER says, in his lectures on the treatment of tuberculosis (*Bull. Gén. de Thérap.*, March 30, 1879), that agaricum is one of the most efficient

drugs for curing the debilitating night-sweats of tuberculosis. The drug is not new; it was first mentioned by De Haen, and Andral experimented with it in the Hôpital de la Pitié. He proved that it has the power of preventing the sweating, and that it may be given in doses of two grammes without provoking any digestive trouble; a dose of three grammes induced an attack of diarrhœa. He used to give it in doses of 20 centigrammes. Trousseau ordered the same dose to be taken two hours before bedtime, and always found it answer very well, except in cases of very great cachexia, where the sweating was much reduced, though not entirely suppressed. Peter gives it in doses of from 20 to 30 centigrammes with good effect. He illustrates its power by several cases in which it has proved efficient, of which we here quote the case of a young man who suffered from consumption, and had very profuse night-sweats. After entering the Pitié, these sweats continued during the day time also, and the patient was much reduced by them. Twenty centigrammes of agaricus were given him, and the night-sweats disappeared. The treatment was continued, and, six weeks later, the patient had regained flesh, felt much better, and left the hospital.—*London Med. Record*, July 15, 1879.

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The Use of Iron in Certain Stages of Cardiac Disease, and the Advantage of Combining Chloride of Ammonium with Iron.

In a very interesting and instructive paper (*Practitioner*, August, 1879) Dr. T. GRAINGER STEWART, Prof. of Practice of Physic in the University of Edinburgh, draws attention to two points. First, that in certain cardiac cases, particularly those in which the aortic valves are diseased, a peculiar condition sometimes arises which demands for its treatment large doses of iron. Second, that in some cases, both belonging to the above group and of other kinds, the reception of iron by the system is greatly facilitated if chloride of ammonium be administered along with it.

In illustration of both points he cites the following case:—

Neil McLeod, a seaman, 38 years of age, was admitted to the Royal Infirmary on the 23d October, 1877, complaining of breathlessness on exertion, giddiness, palpitation and pain in the region of the heart. In 1867 he had suffered from rheumatic fever, but was not aware that any cardiac complication had then existed. In 1875 he observed that his strength was failing, that he had become breathless on exertion, was apt to cough, and often had passing fits of giddiness. These symptoms rapidly increased, and he soon felt himself unfit for duty.

At different times he was under treatment in the infirmary at Calcutta, and in Greenwich Hospital, and although he made each time a temporary rally, he soon fell back, and on the whole the debility, breathlessness, and pain were gradually increasing.

The exacerbation of illness which led him to seek admission to the infirmary, had been induced partly by hard work while employed in a coasting vessel scarcely seaworthy, and partly by intemperance.

On admission his face was pale, his expression anxious, his eyes were somewhat staring, his lips slightly livid. His temperature was normal, and beyond flabbiness of tongue and some feebleness of digestion, there was no disease of the alimentary system. The liver dulness was increased, measuring seven inches in the mammillary line, and the organ was tender on pressure. There was some bulging in the præcordial region. The apex beat of the heart was felt strong and diffused, the area of dulness of the heart was increased. On auscultation in the mitral area, a loud, harsh, systolic bruit was heard, propagated towards the axilla and inferior angle of the scapula. There was also a slight diastolic murmur. In the tricuspid area there was a short systolic murmur, and a prolonged diastolic.

In the aortic area the first sound was weak and impure, there was also a loud high-pitched diastolic murmur propagated down the sternum to the ensiform cartilage. In the pulmonary area the second sound was accentuated. The pulse was forty-six per minute, weak and compressible, and even in this condition presented something of the water-hammer character, although much less distinctly than it did at a later period in the history of the case. There was no dropsy, and the urine was natural.

There could be little doubt that the valvular lesions had originated in connection with the rheumatic fever, and it was clear that these lesions were incompetence of the aortic and mitral valves, with impairment of the muscular power of the heart. All the other symptoms, the general poverty of blood, the cerebral anæmia, giddiness, and general distress, were secondary to these. The indications for treatment were to obtain rest, to support the strength, and in particular to strengthen the heart and improve the condition of the blood. If these indications could be met, it seemed likely that the symptoms due to anæmia and deficient nutrition of the brain would disappear, and that on their disappearance the patient would be comparatively well. With the view of meeting the first indication, the patient was directed to remain in bed; the second, food rich in nitrogen, and in quantities small at a time but frequently repeated, was ordered; and the third, perchloride of iron in full doses was prescribed. At first twenty minims of the tincture were given three times a day, but the doses were gradually given more frequently until he was taking five or six in the twenty-four hours. It was at once apparent that these measures were doing good. The pallor became less marked, the giddiness and headache less troublesome. But some functional derangement of the stomach and liver set in, the tongue became furred, the appetite impaired, the liver somewhat more enlarged from increased congestion, and the headache became again more severe; the patient's condition thus continued to be manifestly perilous. In these circumstances, instead of abandoning perchloride of iron, I added to it chloride of ammonium in doses of half a grain to each minim of the tincture. This was followed by the best results, for the gastric and hepatic symptoms rapidly disappeared, and for a considerable time the patient went on taking the mixture six times a day, so that he used two drachms of the tincture of perchloride of iron daily, without exhibiting the slightest sign of gastric or hepatic disturbance.

As a result of this treatment, to quote the words of Mr. Henry Handford, M. B., the clinical clerk, "a gradual but marked improvement in his general condition took place. His face lost its anxious expression, the palpitations became less distressing, the action of the heart less tumultuous, although still not quite regular. The pulse became much stronger and more frequent—seventy in the minute—and more characteristic of aortic regurgitation. The aortic diastolic murmur became less loud, but nevertheless was quite distinct. The mitral symptoms remained unaltered. The congestion of the liver was not so great, as shown by a decrease in the vertical dulness. The transverse dulness of the heart was unaltered." It may be added that the pallor and the signs of cerebral anæmia became less marked, and the patient left the infirmary in a condition which enabled him to resume his occupation.

This case afforded an example of a condition by no means uncommon, but of which Dr. Stewart has been unable to find a satisfactory description in books. The first glance at the patient leads one to notice the pallor, the very anxious expression, the restlessness, the pale lividity of the lips, the throbbing of the carotids, and perhaps of the temporal arteries; whilst the patient complains of giddiness, perhaps of headache, certainly of breathlessness, and of a debility that amounts at times to faintness. He is somewhat relieved by food, and unless there

is some dropsical effusion to prevent it, he is easier in the recumbent position. But he obtains very little sleep. The explanation of his various symptoms is readily found. The pallor and the head symptoms are due in part to anæmic deterioration of the blood and partly to imperfect filling of the arteries supplying the face and brain. The throbbing is due to the ill-filled condition of the arteries, contrasting with their sudden temporary filling during the ventricular systole; while the breathlessness and the lividity are connected with the dilatation and the partial failure of the heart's action. Sometimes the distress is aggravated by the existence of dropsical effusion, and it seems to be specially severe when the pericardium is its seat. Such cases sometimes prove rapidly fatal by sudden syncope, and sometimes death follows upon a long agony, characterized mainly by symptoms of cerebral anæmia. These cases do not seem ever to recover spontaneously.

Treatment by the administration of cardiac tonics, and especially of iron, leads in many cases to decided improvement. The form which Dr. Stewart finds best is the tincture of perchloride, but it must be given in large quantity. He has gradually been led to give it in larger doses; sometimes even to the amount of twenty minims every two hours, more frequently every four hours, continuing its use for days together. In many cases the patients speedily experience relief, and before long there is manifest improvement. As in the patient whose history is given, they are enabled after a time to leave the hospital and return to work.

But there is great difficulty in carrying out this plan of treatment from the gastric and hepatic derangement which so frequently follows upon the use of iron. During the past two years Dr. Stewart has sought to meet this difficulty by combining chloride of ammonium with the iron, according to the suggestion of a medical officer of the Indian service, to the members of which we are so much indebted for our knowledge of the value of that salt in hepatic affections. During that time he has repeatedly been thus enabled to administer iron in large doses in combination with chloride, to patients who otherwise could scarcely have used iron. It will be observed that in the case now recorded, the iron speedily led to dyspeptic symptoms, so that it was impossible to persevere with its use. But the addition of the chloride both relieved the existing dyspepsia and enabled us to continue to administer the iron in large doses, and for a considerable time. So far as he can judge, iron is the only remedy which could have saved the life of the patient at the time, and but for this effect of the chloride of ammonium, he does not know how he could have administered iron so freely as to suffice.

But the combination of perchloride of iron and chloride of ammonium is useful not in cardiac cases only.

Dr. Stewart narrates two cases, of which notes have been given him by his friend, Dr. James Ritchie.

A lady, aged 62, suffering from carcinoma uteri, had frequent attacks of metrorrhagia which had produced profound anæmia. The tincture of perchloride of iron was prescribed, but it produced so much gastric irritation that it had to be discontinued. After the stomach had recovered she was again ordered tincture of perchloride, with the addition of ten grains of the chloride of ammonium to every twenty minims of the tincture. This mixture was well received by the stomach, and was continued for some weeks without the slightest disturbance of digestion.

Again, a boy of 13, of feeble and rather strumous constitution, suffered from sore throat, gastro-intestinal disturbance, headache, giddiness, and almost daily epistaxis. The liver was enlarged so as to extend down nearly to the umbilicus, was tender, and had an uneven surface. The spleen also was enlarged, and projected three inches beyond the costal cartilages. Microscopic examination of the

blood showed marked increase of the white corpuscles, with great diminution of the red, and an unusual amount of granular material. In this case it seemed highly probable that the iron alone could not be received, and accordingly the combination of iron and chloride was administered. The medicines were well borne, and speedy improvement of the general condition took place.

Cardiac Complications in Gonorrhœa.

M. MOREL states (*Rev. des Sciences Méd.*) that he has collected all the cases hitherto published—13 in number—of heart-affection occurring during the course of gonorrhœa. Of the 13 cases, two are examples of pericarditis, and 11 of endocarditis. All the valves of the left side of the heart have been found affected, but the aortic most frequently so. The cardiac affection is usually mild in character, and only revealed by slight symptoms, which may be easily overlooked. Two cases, however (Obs. de Lorain et de Deanos, mitral endocarditis), ended fatally. The affection generally shows itself during the course of gonorrhœal rheumatism; but, in two cases (Lacassagne, Marly), it is expressly stated that there was no rheumatism. In five cases, the first manifestation of joint affection appeared during an attack of gonorrhœa. In five cases, the antecedents of the patient are not mentioned; three only are noted as having suffered from rheumatism previous to any urethral discharge. Age does not appear to influence the development of cardiac complication; in these cases, the youngest patient was 23, and the oldest 50. All were males.—*London Med. Record*, July 15, 1879.

Cardiac Neuritis.

Attention has recently been called by some Continental physicians to a pathological condition of considerable clinical interest and importance, especially in connection with some forms of angina pectoris. Dr. Peter, the eminent physician of La Pitié, and well known as the editor of the last edition of Trousseau's *Lectures*, has been especially concerned in endeavouring to give prominence to the theory that, when symptoms of angina pectoris accompany disease of the coats of the aorta (aortitis) with dilatation of that vessel, the peculiar clinical phenomena observed are due to an inflammation of the nerves of the cardiac plexus: an inflammation which extends from the arterial tunics to the branches of the cardiac plexus in contact therewith. Several cases have been reported and analyzed in support of this view. In one case observed and reported by Dr. Bazey, the cardiac plexus was carefully dissected at the necropsy, and the nerves composing it were found thickened and presenting moniliform swellings along their course. It has been noticed that in these cases, in contradistinction to others which are purely neuralgic, the pain is permanent instead of intermittent, or at any rate, there are certain points which remain always painful on compression with the finger, especially, for example, the intercostal spaces along the left border of the sternum. In some of these cases, compression of the left vagus in the neck would at once induce pain in the region of the cardiac plexus, and the pain would radiate along the course of the branches of the pneumogastric; as for instance, along the back of the sternum, in the stomach which becomes distended with gas, and in the region of the pulmonary plexus. M. Bucquoy has also noticed, at the termination of such attacks, severe pain in the hepatic region, which he refers to a participation in the disturbances of the terminal ramifications of the vagus on the right side. M. Peter maintains that the aortic insufficiency which frequently coexists in such cases must be regarded simply as a "contingent fact," and as quite incapable of itself to excite the paroxysms of angina. He, however, is especially urgent in calling attention to the far more serious significance of aortic

insufficiency when it arises from an affection of the arteries, when disease of the aorta extends to and implicates the sigmoid valves, than of aortic insufficiency of endocardial origin: since the former condition commonly leads to a cardiac neuritis with all the grave phenomena of angina pectoris. M. Huchard has also insisted on the fact that the gastro-hepatic disturbance which he has observed in several cases of cardiac disease is exclusively dependent on a phlegmasia of the cardiac plexus; such as severe pain after food, enormous distension of the stomach with gas, pyrosis, anorexia, and vomiting. Hence in cardiac neuritis we may encounter a great variety of symptoms, according to which of the numerous ramifications of the pneumogastric are especially involved; disturbance of cardiac rhythm and syncope if the cardiac branches themselves be chiefly involved; or gastro-hepatic symptoms or pulmonary symptoms, if the branches going to the digestive or respiratory organs be mainly implicated.

The morbid anatomy of the nerves of the cardiac plexus has been specially examined by Putiatin of St. Petersburg, who has found in some cases, after death from cardiac paralysis, in which no coarse changes in the cardiac structures could be discovered, a diseased condition of the cardiac ganglia limited to distension of their vessels, and an intermixture of granulation-cells with the nerve-fibres and corpuscles. In older cases, where organic disease of the heart also existed, more decided pathological changes were observed, consisting chiefly in increase of interstitial connective tissue and atrophy and granulation of the nerve-cells.

This is a somewhat neglected branch of cardiac pathology, to which we would especially direct the attention of our many able and industrious morbid anatomists.—*Brit. Med. Journ.*, July 12, 1879.

Treatment of Infantile Diarrhœa.

At a late meeting of the Medical Society of the County of New York (*Med. Record*, July 26, 1879) Dr. A. JACOBI read an instructive paper on the above subject, from which the following extract is made.

The preventive treatment of diarrhœa, depending on defective alimentation, consisted in so changing and arranging the milk used for babies that the casein would not coagulate in large lumps, and thus become more digestible. That object could be obtained by adding such farinaceous food as did not contain much starch. It consists in diluting the boiled and skimmed milk with barley-water or oatmeal gruel. It must be boiled to check its tendency to become sour, to remove a portion, though small, of its casein and fat, and to expel the gas contained in the raw milk to the amount of three per cent.

Of the two, he preferred barley for general use. He recommended that the barleycorn which was employed for infant diet should be ground as thoroughly as possible in a coffee-mill, both in order to diminish the period necessary for cooking it, and also in order to retain the gluten. *It was even preferable, for very young infants, to cook the barley whole for hours*, thereby to burst the outer layers of cells, empty their contents, and then, by straining, to get rid of the larger part of the starch which was found toward the centre. There was no danger to which little children were so liable as that which arose from their tendency to diarrhœa. His advice, therefore, was to administer barley to children who manifested a tendency to diarrhœa, and oatmeal to those having a tendency to constipation, and, whenever a change occurred in the intestinal functions, to give one or the other, according as constipation or diarrhœa predominated.

He held that mixture to be the *conditio sine quâ non* of the thorough digestion of the milk. It only would insure the proper nourishment of the infant. With that food alone he had seen children endure the heat of summer without any

attack of illness whatever. He had occasion again and again to be convinced of the reliability of the mixture. It had the advantage, too, that it necessitated no dependence upon the honesty or competence of the apothecary or manufacturer, but could be prepared by any one, however poorly situated. Should a slight diarrhoea occur, or a little casein be vomited (a rare accident, to be sure), or casein occur in the stools, then all that was necessary was to diminish the proportion of milk. It might sometimes be necessary, though very seldom, to withdraw the milk entirely for a time, but only in cases of real illness. If the physician or attendants had properly apportioned the ingredients of the mixture, we might be rather sure that the child's digestion and assimilation would be regular and normal. Infants that were partly nourished at the breast almost invariably thrived well with the addition of his mixture. Children, from their fourth or fifth month and upward, might often be fed with it exclusively, and not unfrequently nothing else was given from the day of the birth.

The addition of barley or oatmeal for the purpose of rendering milk digestible was not, however, absolutely indispensable, though he had learned to prefer them. For, gum arabic and gelatine were also very valuable ingredients, indeed, of infant foods. Dr. Jacobi then dwelt at some length upon the changes which gum arabic and gelatine undergo when put into the stomach.

Curative Treatment.—The amount of food should not be larger than we had reason to expect could be easily digested. At all events, either lengthen the intervals between the meals or reduce the quantity of food given at one time, or both. When diarrhoea made its appearance in infants who had been weaned, it was desirable to return them to the breast. Those who never had breast-milk might be given the breast if they could be induced to take it, but only rarely would that be found possible. Whenever a child at the breast was taken with diarrhoea, the passages from the bowels should be studied as to their contents. If a certain amount of curd was found in them, the least that was to be done was to mix the breast-milk with barley-water. That might be done in such a manner that, each time before nursing, one or two teaspoonfuls of barley-water was given the child, so that the farinaceous food and the breast-milk mixed in the stomach. Or, it might be found advisable to alternate breast-milk and barley-water. In bad cases, particularly when the milk was found to be white and heavy, and contained a great deal of casein, it would be found necessary to deprive the child *altogether* of its usual food. In such cases, the child would do better on barley-water alone (that to be continued for one or two days), than to expose it to the injury which would certainly follow the continuation of the casein food.

When diarrhoea occurred in children who had been fed alone upon cow's milk, unmixed or mixed, it was necessary to reduce the quantity of cow's milk in the mixture. As a rule, we had to remember that cow's milk alone was apt to produce diarrhoea, and it should be considered as a maxim that, whenever diarrhoea made its appearance, the amount of cow's milk given to the child should be reduced. When a mere reduction of the quantity did not suffice, it was very much better to deprive the child of milk food altogether. Not infrequently the removal of milk from the bill of fare was the only thing which would restore the child to health. It was possible that a mixture, such as recommended by Dr. Rudish, already mentioned, would be found digestible, even in such cases. In many cases, as a dietetic measure, it would be found advisable to add one or two tablespoonfuls of lime-water to each bottle of food with which the child was supplied.

In those cases in which barley-water did not seem to suffice as a nutriment, or where it would be dangerous to allow children to lose strength, a mixture which he had used to great advantage was the following: Mix the white of one egg

with four or six ounces of barley-water, and add a small quantity of table salt and sugar, just sufficient to make the mixture palatable. The child could take this either in large or small quantities, according to the case.

In those cases in which the stomach was irritable, and vomiting had occurred, it was now and then better to give a small quantity, even one or two teaspoonfuls, and repeat the dose every ten, fifteen, or twenty minutes, than to give larger quantities at longer intervals.

In those cases in which the strength of the child has suffered greatly, he recommended the addition of brandy to the mixture in such quantity that the child would take from one drachm to one ounce (grms. 4.0 to 30.0), more or less, in the course of twenty-four hours.

In those extreme cases in which the intestinal catarrh was complicated with gastric catarrh, where the passages were numerous and copious, and vomiting constant, where both medicines and food were rejected, there was frequently but one way to save the patients, and that was to deprive them *absolutely* of everything in the form of either drink or food or medicine. It was true that such babies would suffer greatly from thirst for an hour or two, but it was a fact that, after two or three hours, those children would look better than before the abstinence treatment was commenced. Not infrequently four or five hours of total abstinence would suffice to quiet the stomach and diminish both the secretion and the peristaltic movement of the intestinal tract. In some cases *six* or *eight* hours of complete abstinence would be required; or such children might be starved for even *twelve* or *sixteen* hours, with final good results. The first meals afterward must be quite small, and they would be retained, and, as a rule, such children would subsequently do well.

Dr. Jacobi here enforced the necessity of supplying the patient with as much cool fresh air as possible. The worst out-door air was better than close in-door air. If possible, the children should be sent immediately to the country and into the mountain air.

The second indication consisted in the removal of undigested masses retained in the intestinal tract. Not only in cases in which the diarrhoea had resulted from previous errors in diet of the child, but also in those cases dependent upon sudden changes of temperature and exposure, it was desirable to empty the intestinal tract. For that purpose castor oil, calcined magnesia, or calomel might be used.

Third. Nothing should be given that contained salts in any sort of concentration. Thus, beef-tea should be avoided. It must be remembered that that form of meat-extract contained a very large amount of salts, and that the direct effect of those upon the intestinal canal might be productive of very unpleasant consequences. If the people insisted upon giving it, and there was no special contra-indication to its use in a given case, it should be administered only in connection with some well-cooked farinaceous vehicle, and the best of all for that purpose was barley-water; or it might be mixed with beaten white of egg, but no more chloride of sodium should be added. For the main danger in beef-tea was the concentrated form in which its salts were given.

Fourth. Everything should be avoided that increased peristaltic motion. Thus, carbonic acid and ice internally.

Fifth. Avoid whatever threatened to increase the amount of acid in the stomach and intestinal tract. There was so much acid in the normal, and still more in the abnormal stomach and intestinal tract, that it was absolutely necessary to *neutralize* it. For that purpose it was safer to resort to preparations of calcium than of sodium or magnesium. So far as lime-water was concerned, its adminis-

tration, certainly, was correct chemically. But we should not place too much reliance upon that popular remedy. We should not forget that it contained about one part of lime to eight hundred of water, and that it was necessary to swallow at least *two ounces* of the fluid in order to obtain a single grain of lime.

A further indication was, *the necessity of destroying ferments*. For that purpose most metallic preparations would do fair service. One which had been extensively used was *calomel*, and now in *small doses* frequently repeated— $\frac{1}{8}$, $\frac{1}{4}$, or $\frac{1}{2}$ a grain every *two or three* hours. As to its effect as an antifermentative, there could be no doubt.

Nitrate of silver, when given for the same purpose, should be *largely diluted*. From $\frac{1}{8}$ to $\frac{1}{4}$ of a grain dissolved in a teaspoonful or tablespoonful of water, might be given every *two or three* hours, and not infrequently with fair result. That was especially important with regard to injections of nitrate of silver into the rectum, where it was apt to do as much harm as good. Whenever it was to be given in that way, the solution should be mild and largely diluted, or the anus and its neighbourhood should be washed with salt water before the injection was administered.

Bismuth acted very favourably. Moderate cases of diarrhoea would usually show its effect very soon. Doses of from $\frac{1}{2}$ to 2 or 3 grains, given every *two or three* hours, would act very favourably indeed. In those cases in which the diarrhoea had lasted for a long time, the doses of bismuth should be large in order to be certain of immediate contact of the drug with the sore surface.

A *final indication* was the depression of the hyperæsthesia of the general system and of the intestinal tract in particular. There had been authors who condemned the use of opium altogether, which, certainly, was incorrect. The doses should be *small*, and they might be repeated frequently. Administered in that manner, opium could be used with perfect safety both internally and in an enema. One of the rules for giving opium was that the child should not be waked up for the purpose of taking the medicine. Whenever there was fear of collapse, it was safer to give $\frac{1}{8}$ of a grain every half hour or hour, than to administer $\frac{1}{2}$ of a grain every two hours.

Alcohol.—Small and frequent doses would certainly stimulate the nervous system, digestion, and circulation, and they also stimulated the skin and increased perspiration. Alcohol, given in that manner, certainly arrested fermentation. Moreover, it took the place of food, and acted favourably as food when no solid carbo-hydrates were tolerated by the intestinal tract. As it was absorbed in the stomach, so did it protect the intestinal tract.

Finally, it is necessary to reduce the amount of secretion taking place from the surface of the intestinal tract. For that purpose astringents might be used, such as alum, lead, tannic acid, perntrate of iron, and, what had already been spoken of, nitrate of silver. In all those cases in which the stomach participated in the process to any considerable extent, almost any astringent would prove ineffective. To fulfil several indications at the same time, it was often good practice to combine remedies.

The main indications were to neutralize acids, to reduce nervous irritability, to arrest secretion, and to change the condition of the surface of the catarrhal mucous membrane.

For that purpose, in the generality of cases, he combined bismuth, opium, and chalk, according to the following formula: R. Bismuth subnit., gr. i; Prepared chalk, grs. ij; Dover's powder, gr. $\frac{1}{2}$.

That combination was suitable for a baby *ten or twelve* months of age, and the dose could be repeated every two hours. In all those cases in which acid was

very abundant, it was necessary to increase the doses of antacids without necessarily giving large doses of opium.

Hot bathing was especially serviceable in those cases in which the surface was cool and the temperature of the body, measured in the rectum, was pretty high. To relieve intestinal pain, plain warm fomentations; to relieve heat, cold applications were sufficient.

Camphor stimulated the heart, and reduced temperature, and might be used internally or subcutaneously according to the necessities in the case. For subcutaneous injections it might be dissolved in either oil or alcohol. The effect derived from camphor as a stimulant was not permanent, but very much more so than that produced by carbonate of ammonia. The dose might be from $\frac{1}{4}$ to $\frac{1}{2}$ a grain every hour or two, when only a moderate stimulation was required. In urgent cases it might be given in doses of from five to ten grains in the course of an hour, and usually the effect would be favourable. It was, however, only in cases in which real collapse was present that doses of five or ten grains would be required.

There was no remedy that would act more favourably in conditions of great debility and collapse than *musk*. It might be given in doses of five or ten grains, and repeated every half hour or hour. More than two or three such doses would not be required to yield a result.

Pathological Anatomy of Muscular Atrophy.

HAYEM (Paris, 1877) has endeavoured to draw up the anatomo-pathological history of muscular atrophy, independent of the different pathological causes. He includes under the name of muscular atrophy all those muscular affections in which the striated fibres have either entirely disappeared or only become much reduced in size. In the first chapter of his book he enters fully into the structure of the normal muscular tissue and the modifications which the striated substance is apt to present under certain conditions. We have given a short *résumé* of the conclusions at which he has arrived in his researches on the influence of traumatic lesions or certain chemical agents on the formation of vitreous deposits, and on the changes which the muscle undergoes in the dead body. 1. The vitreous transformation of the muscular fibres is not merely a modification caused by death, but a change peculiar to living fibres, probably due for the greater part to the contractile power of the fibres. 2. The loss of vitality of the muscular fibres can be anatomically recognized by a peculiar change which takes place in the striated substance, and by the fact that certain fluids no longer possess the power of transforming it into the vitreous substance. 3. The muscular fibres resist the process of decomposition for a certain length of time. When putrefaction has finally set in, the changes produced in the fibres are such that they cannot be mistaken for pathological alterations, except in the frog, where the changes wrought by putrefaction do not differ much from changes which would take place in degenerated *intra vitam*. The second chapter contains the anatomo-pathological history of the muscular tissue. It begins by a general survey of the lesions of the striated substance (modification of the striæ, loss of transparency, simply atrophy, diverse degenerations), of the muscular cells (tumefaction, multiplication, neoformation, atrophy, degeneration), of the sarcolemma, the perimysium of the vessels and intra-muscular nerves. The author then proceeds to describe the changes occurring in the muscles, which correspond to the various causes of muscular atrophy. Atrophies caused by some nervous affection are most frequently met with. In cases where the atrophy is merely the consequence of a simple suppression of voluntary stimulation (hemiplegia originating in some cerebral affection, prolonged

inactivity, etc.), the muscular lesions are not very important. A few fibres have become atrophic, and the rest have retained their original size, and merely undergone a very slight degree of granulo-pigmentary degeneration, which gives the muscle a brownish colouring, that has long ago been pointed out by M. Charcot. When the atrophy is caused by some destructive lesions of the cells of the anterior horns of the spinal cord, the affection assumes a greater importance. In acute central myelitis, of which three cases have come under the author's notice, the muscular fibres undergo an acute fatty degeneration, they become opaque and their nuclei are swelled. In infantile paralysis, and in chronic affections of the spinal cord (progressive muscular atrophy, sclerosis, partial myelitis, etc.), the muscular fibres present numerous modifications. Some are merely atrophic, with occasional proliferation of their nuclei; others are undergoing a granular degeneration, which is attended during its first stages by a considerable multiplication of the nuclei, and, during the latter stages, by atrophy of the same. In a third class, the fibres are infiltrated with pigmentary granulations, or present certain modifications in the structure of their striæ. The existence of vitreous degeneration in amyotrophias due to some spinal affection has not yet been sufficiently proved. As the muscular fibres become atrophic, the connective tissue becomes thicker, and is covered with a layer of fat cells. Similar changes have been observed in amyotrophia, following the lesions of nerves (neuralgia, neuritis, traumatic lesions, etc.). After having stated and criticised the different opinions which have been emitted by various authors on the pathological physiology of these muscular atrophies, which are closely allied to changes in the spinal cord or the nerves, the author ranges himself among the partisans of the theory of the trophic effects. He admits that the cells of the anterior horns of the gray substance of the medulla exercise both a motor and trophic influence on the corresponding muscles, and that this effect is transmitted by the medium of the motor nerves. It results from this, that any change which is capable of suppressing or diminishing the influence of the medullary cells on the muscles, will be followed by paralysis and atrophy. In one of the most remarkable portions of his work, the author exposes his views on atrophy of the muscles resulting from dyscrasia; acute starvation does not produce any notable alterations in the muscles, but acute marasmus always gives rise to very considerable lesions. The muscles are semi-transparent and of a purplish colouring; they are soft, viscous, sticky; their vessels are filled with blood; every trace of interstitial fat has disappeared. If the fibres are examined while yet fresh, they seem to have grown thinner, they are semi-opaque, and present the appearance of having been covered with dust. Some of them consist apparently of a semi-liquid grayish substance, in which hardly any traces of striation are left; others are undergoing fatty or granulo-pigmentary degeneration. The muscular cells are not increased in number, some of them have assumed the appearance of small vesicles. These changes in the muscular tissue attack all the muscles of the body, including the heart. The changes wrought by chronic marasmus do not vary much from those which have just been described. The wasted muscles are of a pinky gray tint covered with yellow lines and spots; they are soft and flabby. The microscope lesions are diffused over the whole muscle, and may be described as simple atrophy, the striation still existing, granular degeneration, fatty degeneration, or pigmentary degeneration. Small hemorrhages and accumulations of interstitial adipose tissue are frequently found in the perimysium. Muscular atrophy resulting from acute affections complicated with changes in the blood, presents altogether a different appearance. It may be limited to one particular region or be diffused over the whole system. In the latter case, the alterations in the muscular tissue resemble more or less those observed in acute marasmus; the muscles are con-

gested, the striation appears blurred and indistinct, and the sarcolemma is in a state of partial degeneration. The circumscribed lesions, on the contrary, have all the characteristic symptoms of inflammatory lesions; they are the principal cause of symptomatic myositis with its host of complications, such as hemorrhage, suppuration, etc. The author winds up with a short sketch of muscular atrophy, due to poisoning with certain substances, or to primary affections of the muscles.—*London Med. Record*, July 15, 1879.

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*Generalized Scleroderma, with Bronzing of the Skin and Punctate Vitiligo
(Leucoderma).*

The patient, a man, aged 43, had always had a brown skin, but twenty months before he came under notice, he somewhat suddenly became as brown as a mulatto. At the same time he was seized with violent itching all over the body, and scratched and rubbed himself till the blood flowed. Not only the exposed parts became tinted, but also the skin of the back and abdomen. M. FÉRÉOL describes the colour as one of yellow-brown, or sepia, very like, at first sight, the coloration of Addison's disease. The abdomen was most affected; the genitals and extremities less so. A stroke with the finger nail upon the skin produced a persistent white streak, due to the elevation of the epidermis, mapping out a dull white upon the deep black of the pigmented derma. The mucous surfaces of the mouth, etc., presented no pigmentation, except a very pale tattoo upon the lower lip, opposite some carious teeth. The bronzing was in some parts uniform; in others granite-like from two tints. Besides this feature, there were a number of white patches distributed symmetrically, and occupying all those parts where the bones made prominences. Almost at the same time that the change of colour commenced, the patient perceived that his skin became hard and inextensible, seeming to fit tightly to the deeper parts. This was particularly so with the hands, the trunk, and the face, so as to hinder his work and even impede mastication. The description of the case by M. Féréol is one of typical scleroderma, affecting the hands, as well as other parts, producing contraction of the palmar fascia, and showing also superficial scars of a former necrotic process, such as is known to occur in some cases of scleroderma. He experienced considerable impediment in his movement; he could not dress himself, and walking fatigued him. He breathed well, notwithstanding the thoracic sclerosis. There was grating in some of his joints. His antecedents are also important. His mother, though still living, is very nervous. In his youth he was strumous, suffered thrice from pneumonia, and after that, being a looking-glass maker, he suffered from mercurial poisoning. He subsequently suffered from a long attack of rheumatism, which attacked all his joints, and crippled him considerably for a long period. M. Féréol insists much on this rheumatic attack as determining the development of the scleroderma, but it is also worthy of discussion whether Addison's disease is not coexistent with scleroderma, or whether the coloration is anything more than an excessive development of the pigment, which is usually present in excess in leucoderma, in parts which are not leucodermic. All things considered, M. Féréol inclines to the opinion that the case is not one of Addison's disease with scleroderma, but that the coloration and scleroderma are both determined by some common cause.—*London Med. Record*, July 15, 1879.

Surgery.

Analysis of Three hundred and fifteen Cases in which Foreign Bodies were lodged in the Brain.

Dr. H. R. WHARTON analyzes (*Phila. Med. Times*, July 19, 1879) three hundred and fifteen cases in which foreign bodies were lodged in the brain, of which one hundred and sixty recovered, while one hundred and fifty-six died.

In one hundred and six cases the foreign body was removed, death following in thirty-four cases, recovery in seventy-two cases.

In two hundred and ten cases no attempt was made to remove the foreign body, death following in one hundred and twenty-two cases, recovery in eighty-eight cases. It should be here stated that some ten patients who recovered sufficiently to attend to their regular occupations, but ultimately died at periods varying from three to fifteen years from the effects of their injuries, have been classed as having recovered.

Considering the severity of the injury, the proportion of recoveries is large, but on examination of the cases it will be observed that many of the recoveries were not complete, the patients afterwards suffering from epilepsy, vertigo, impairment of mind, incapacity for physical exertion, paralysis, loss of sight and hearing. In one hundred and eleven of the cases of recovery the above-named symptoms were wanting, while they were present in forty-nine cases.

In the one hundred and eleven cases that recovered without bad symptoms, the foreign body was removed in fifty-six cases and allowed to remain in forty-five cases. The question of interference for removal of foreign bodies is one which has caused much discussion, but on which Dr. W. thinks authorities are now generally agreed. In the following collection of cases the results of its removal were not only most satisfactory as regards recovery, but also as regards the completeness of the recovery. There can be no doubt that the presence of the foreign body increases the gravity of the injury, and that when its position can be clearly located, and when its removal is not accompanied with too great a destruction of tissue, it should be attempted. The difficulty of locating the foreign body is seen to be great, for when it has once passed out of sight the surgeon has no means of discovering its position, except by the probe. Extreme care should be exercised in passing a probe along the track of a foreign body in a wound of this nature, as little force is required to cause the probe to pass through the unresisting brain structure in a course different from that taken by the vulnerating body, and the surgeon may add other wounds to an already most serious injury. On the other hand, where the body cannot be accurately located, all attempts to find it by frequent probing should be desisted from, for, as has been shown, a large number of cases have recovered where it has not been removed, and there is a possibility of its becoming encysted, and of recovery taking place in this way or of life at least being prolonged.

Dr. W. thinks that Prof. Thomas Longmore, in his article on trephining in injuries of the head, expresses the opinion of the best surgeons of the present day. He says, "If the site of lodgment of the projectile is obvious, it should be removed with as little disturbance as possible, but trephining for its extraction when the place of its lodgment is not definitely known, but where the projectile is only supposed by inference to be lodged in a particular spot beneath the cranium, is an unwarrantable operation."¹ The presence of the foreign body in the brain in many cases excites inflammatory action, which may be either rapid or slow in its

¹ Holmes's System of Surgery, vol. ii. p. 181.

progress, sometimes destroying large amounts of brain-tissue before the case ends fatally. That cerebral abscess is a frequent cause of death is clearly shown by the fact that it was present in at least fifty-three of the fatal cases where post-mortem examinations were made; in many other cases the examination was made solely with reference to the location of the foreign body, and the condition of the surrounding tissues is not stated.

Apoplexy is also shown to be a cause of death in these injuries, but much less frequently than abscess. Pressure of the foreign body on the venous branches, interfering with the return of blood, causing effusion into the cavities of the brain, and this effusion by its pressure interfering with the function of the nerves which have their origin from the base of the brain, is also noted as a cause of death. Convulsions and coma, also resulting from this interference with the circulation of the blood in the brain, are frequently noted. A tendency to coma, it might be here stated, as in all head injuries, is a most unfavourable symptom, nearly every one of these cases in which it was marked proving fatal.

The presence of the foreign body in the brain seems to predispose to inflammatory action; in some cases of recovery where the foreign body remained in the brain, the cases progressed favourably until some cerebral excitement was experienced; five cases are recorded where death took place suddenly after excessive drinking, in one case during the excitement of a game of cards, in another after a slight injury of the head.

Seven cases were complicated with hernia cerebri; three of these proved fatal, four ending in recovery.

In quite a number of cases the foreign body remained in the brain for some time without causing any unfavourable symptoms, when suddenly cerebral symptoms were developed and death quickly followed. Dr. W. thinks that the experiments of M. Flourens will help to explain these cases. He introduced leaden bullets into the brains of rabbits and dogs. The balls were placed on different parts of the upper region of the encephalon and on the lobes of the cerebellum. The balls left to the action of their own weight, penetrated by degrees the substance of the brain, and ultimately stopped at the base of the cranium, the passage made by the balls healing after them.¹ This fact that bodies were found to change their position may account for the sudden deaths in cases where their presence had previously occasioned little trouble.

Brodie's opinion that recovery is more apt to follow wounds of the anterior portion of the brain is strengthened by examination of the cases where the foreign body penetrated the frontal bone, of which there were one hundred and thirty-two, followed by death in fifty-eight cases and recovery in seventy-four cases.

There were fifty-eight cases of penetration of the parietal bones, followed by twenty-seven deaths and thirty-one recoveries.

The occipital bone was penetrated in twenty-three cases, with sixteen deaths and seven recoveries.

The temporal bones were penetrated in thirty-one cases, with twelve deaths and nineteen recoveries.

Wounds of the orbit were by far the most fatal, eighteen in number, followed by seventeen deaths and one recovery, although the persons were in many cases unconscious of the injury, and the unfavourable symptoms developed suddenly.

The sphenoid bone was penetrated in five cases, with four deaths and one recovery.

In forty-nine cases where the wound of entrance was not definitely stated, there were twenty-two deaths and twenty-seven recoveries.

¹ Dublin Med. Press, July to December, 1862.

Glycosuric Ocular Affections.

(i) Dr. GALEZOWSKI makes a communication (*Recueil d'Ophthalmologie*, 3d series, No. 2, Feb. 1879) upon a new affection of the eye, glycosuric keratitis. Three cases are reported. One of these presented some phenomena of a corroding ulcerous nature; the other two of diffuse keratitis. One of the most characteristic symptoms of these affections is complete anæsthesia of the cornea, in spite of photophobia more or less intense, and peri-orbital pains. Glycosuric keratitis presents itself under two forms—*a*. Corroding ulcer; *b*. Diffuse superficial keratitis. It yields readily under the influence of a severe anti-glycosuric regimen, with warm water douches to the eyelids, administered regularly two or three times a day, and with alternate instillation of atropine and eserine. A case is reported where this treatment gave good results. (ii) *Paralysis of the Third, Fourth, and Sixth Pair of a Glycosuric Nature*. The author's researches have shown that of 100 patients afflicted with paralysis of the sixth pair, glycosuria was traced as the cause in eight cases. It was not so with paralysis of the third pair. This is explained, in the author's opinion, by the original position of the two motor nerves. (iii) *Glycosuric Amblyopia without Lesion*. This malady very often resembles alcoholic amblyopia. It declares itself rapidly, and causes a certain degree of weakness of vision; it remains stationary for months and even years, but is susceptible of amelioration and complete cure under the influence of a simple dietetic regimen. The difference between glycosuria and alcoholic amblyopia may be known by the following signs. (i) The affection generally attacks but one eye, while in alcoholic amblyopia it is binocular. (ii) In glycosuric amblyopia, the patient often distinguishes, although by a great effort, the typographical character number 2. In alcoholism he cannot do so. (iii) Alcoholic amblyopia is often accompanied with a perversion of the chromatic faculty. This phenomenon never exists in glycosuric amblyopia; but there does exist often in both a partial colour blindness. (iv) When alcoholic amblyopia has lasted some months, the papilla is observed to become anæmic, resembling a progressive atrophy of this nerve. In a glycosuric amblyopia, the papilla remains always red, and even with an appearance of congestion. A case is given of amblyopia of a glycosuric nature, with an analysis of the urine, made by M. Mehu, of which the following is the result. Urine, 11.2 gr.; uric acid, 0.27 gr.; sugar, 48.7 gr.; mineral salts, 7.3 gr.; organic matter, 4.98 gr.; water, 927.55 gr.—*London Med. Record*, June 15, 1879.

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Excision of Cancerous Stricture from the Rectum.

At a late meeting of the Royal Medical and Chirurgical Society (*Lancet*, June 28, 1879), Mr. JOHN GUY read a paper in abstract on this subject. The patient, a lady aged thirty-seven, was conscious of having suffered for twelve months from symptoms which were clearly those of cancerous stricture of the rectum. She consulted the author of the paper in 1878, when he discovered a moderately tight stricture, formed of cancerous tissue, ulcerated on its internal surface, about two inches and a half from the anus, occupying the seat of what is known as "Houston's third ligament," just above the tip of the coccyx. Defecation had become difficult, and was often attended with violent straining and the passage of blood or discoloured and offensive sanious fluid. As her sufferings increased, and the necessity for colotomy became imminent, Mr. Gay, with the concurrence of Mr. Worley, of De Beauvoir-square, whose patient she was, after ascertaining that the stricture mass had formed no connections or adhesions with surrounding parts, but was movable amongst them, advised its removal, to which the patient gladly assented. This was done on the 4th of November, with Mr.

Harrison Cripps' and Mr. Worley's assistance, in the following manner : It was at first deemed possible to carry out this object somewhat after the manner that Nature casts off portions of bowel—viz., by invagination, and, with this purpose in view, the operation was begun. The rectum was slit up behind to the coccyx, by means of a strong bistoury (the patient having been placed under the influence of an anæsthetic by Mr. Cumberbatch), and the bowel reached below the stricture by cutting through the levator ani, fascia, and its other investments. The morbid growth was then detached from its surroundings by tearing, as well as a ring of healthy bowel both above and below. An attempt was now made to invaginate the diseased bowel into the healthy portion below, but the absence of sufficient elasticity and mobility on the part of the textures concerned stood in the way of its accomplishment. Excision was then the only alternative, and this was done by cutting across the healthy bowel, first below and then above the disease, partly by the knife, and in other parts by the benzine cautery ; some vessels required tying, and other bleeding was stopped by searing. No attempts were made to bring the edges of the wounds together by force ; they were simply laid together, and the whole dressed antiseptically. The patient had a very good night's rest after the operation, and was sensibly conscious of having been relieved of the source of her suffering. Nothing untoward occurred for the first fortnight but vesical retention for two or three days, which called for the catheter, and fecal incontinence, unaccompanied by any pain. From that period to the 10th of May, the date of the last report, her course was chequered. In December she had an acute attack of cystitis ; when this had passed away she suffered from frequent and irregularly recurring attacks of abdominal spasms, with or without distension or obstruction, which terminated in severe rectal tenesmus. Under the influence of opiates and hot fomentations these subsided, and for a time passed off, but they did not finally cease until the vertical cleft in the bowel had healed. The surfaces of the cut sphincter were exceedingly sensitive, and it was supposed that these spasms were in some way connected with their rawness. After that some folds of skin at the verge of the anus became ulcerated by fecal irritation, and had to be removed. In the month of January it was found that a diaphragm had formed by the thickening of submucous areolar tissue in the neighbourhood of the internal sphincter, with an aperture that allowed the introduction of the forefinger. As the aperture did not appear inclined to become narrower, the barrier was not intentionally interfered with, for with its formation the fecal incontinence lessened, and the alvine discharges became consistent, and, at times, hard, so that it was accredited with the design of supplementing the suspended action of the sphincters. In April the patient began to fall away, and symptoms showed themselves which were only consistent with a recurrence of the disease, and, on examination, cancerous nodules were found on the os uteri and adjoining vaginal tissue against the intestinal citatrix, and no doubt could be felt but that they had formed in the cicatricial tissue as well. In May, however, her condition had improved in some respects. She was free from pain, the abdomen was soft, the motions more under control than they had previously been, and she took her food. Pain and difficulty in micturition, from which she had suffered during a part of the previous month, had also passed away. The local symptoms, however, were unchanged. The author did not claim this as a successful case, but thought it deserving the consideration of the Fellows, inasmuch as it gave grounds for hoping that the surgery of the rectum had not been exhausted. It showed, first, that the system was more tolerant of severe injury to the rectum than had been suspected, for it bore without resentment the removal of a considerable and an entire cylinder from that part of the bowel which closely adjoined the peritoneal cavity. The temperature did not exceed 100° at

any time subsequent to the operation, and only rose to that point for two or three hours on the fifth day. And, secondly, that nature is quite adequate to the process of repair. It is admitted, too, that the recovery was protracted and attended with great suffering, but on reviewing its steps and stages by the side of the painful symptoms with which it was accompanied, it is clear, the author thinks, that the troubles were due to the fact that, throughout, nature was deprived of the assistance of art. Had the sundered portions of bowel been brought more closely into apposition, the cleft in the sphincters been immediately reunited, and all portions of superfluous skin removed from the anus, the suffering must have been much ameliorated, the healing less protracted, and the chance of recurrence of the disease, to a corresponding degree, lessened. The author offered some suggestions for utilizing the rectum, by slitting it up, in cases in which nearer access is needed for surgical purposes, or even exploration to the higher portion of the rectum, such, for instance, as cases of intussusception, impaction, fistulous passages, polypoid and other growths, ulcers, etc. ; and, moreover, that in cases of imperforate anus, taking the coccyx as the "landmark," and assuming that the cul de sac reaches as far as that bone or below it, the bowel might without danger be entered at that point, and an opening made from within. The author concluded by trusting that this case, although incomplete and, in point of aim, in all probability, unsuccessful, might give confidence for future proceedings in the direction indicated, and that, if so, it might, by its relation, conduce to mitigate suffering and to prolong if not to save life.

The PRESIDENT doubted whether excision of true cancer of the rectum were a preferable operation to colotomy, owing to the certainty of speedy recurrence of the disease.

Mr. CRIPPS said that all the specimens he had examined had not been examples of cancer properly so called. The disease began as an adenoid growth in the submucous tissue, proceeding to ulceration and cicatrization, so that the floor of the ulcer becomes dense and scirrhus-like. In a case of his own he had removed a recurrence four months after the primary operation, and since then (about two years) the patient had remained quite well. Her condition was better than if colotomy had been performed. Another patient operated on by Sir James Paget three years ago was now in good health and attending to business.

Mr. HOLMES thought the operation performed by Mr. Gay was not only novel, but, on anatomical and surgical grounds, was dangerous. He knew of cases where, after removal of portions of the rectum, death had ensued from cellulitis and peritonitis, without the peritoneum being injured at the operation. The danger would be increased by slitting up the bowel and removing a zone of it, as Mr. Gay had done. At the same time he thought excision might be of advantage in selected cases ; and he agreed with Mr. Cripps that all the cases are not true cancers. He had excised the lower end of the rectum for an adenoid growth eighteen months ago, and the patient remained well, but had no control over the bowel, the sphincters having been freely removed. Mr. Gay's patient was still in a position to have colotomy performed.

Mr. CRIPPS had notes of thirteen cases (five under his own care) with two deaths ; one from peritonitis, where the peritoneum had been specially wounded.

Mr. HULKE said that several years ago Mr. C. Moore, at the Middlesex Hospital, had performed excision of the rectum for cancer in four or five cases, and Mr. De Morgan in two. All these patients succumbed in three or four days from diffuse pelvic inflammation. Still, in select cases the operation was justifiable ; and he had done it himself. If the disease were beyond reach then colotomy was preferable.

Case in which Sixteen Inches of a Varicose Vein of the Leg were successfully Excised with Antiseptic Treatment.

Mr. THOMAS ANNANDALE reports (*British Med. Journ.*, June 21, 1879) the following case:—

James S., aged 21, a joiner, was admitted to the Royal Infirmary on January 13th, 1879. The patient, who was a great athlete, stated that, four years ago, he strained his leg whilst attempting a high jump. The accident was followed by considerable pain in the part, and by swelling of one of the veins on the anterior aspect of the left leg. Before this time, he had never suffered from any varicosity of the veins.

On admission, the patient was found to have a large single tortuous vein, of about the breadth of one's little finger, running directly upwards from the external malleolus of the ankle-joint for about ten inches along the anterior surface of the left leg; then crossing the tibia obliquely for about three inches, it continued upwards for six inches on the internal aspect of the leg, terminating opposite the inner tuberosity of the tibia.

Operation.—The patient being young and healthy, and the general venous system, with the exception of the part above described, being unaffected, Professor Annandale thought right to attempt a radical cure by excision of the diseased vessel. Accordingly, on January 17th, he made an incision over the lower part of the vein, exposed the branches entering it, tied them with catgut, and then cut them through, in this way separating the affected vein from the surrounding textures. He then ligatured the vein above and below, and cut it out, in this way removing the lower ten inches of the diseased vessel. He next treated the upper six inches in a like manner, but left the middle oblique portion *in situ*, being unwilling to cause a cicatrix over the anterior aspect of the tibia; and hoping that this portion, being ligatured at both ends, would become obliterated. The operation was carried out, and the wound dressed, with antiseptic precaution. During the operation, an elastic bandage was placed round the lower part of the thigh, to keep the diseased vein prominent.

January 18. The wounds were dressed; they looked very well, and quite free from irritation. The blood in the middle oblique portion was found to be coagulating.

On the 22d, 25th, and 27th of January, the wounds were dressed under the carbolic spray; and on February 2d, the wounds being quite superficial, the carbolic dressing was discontinued, and boracic ointment substituted for it. This dressing was applied daily till February 6th, when the wounds were found to be healed.

A day or two afterwards, the patient was dismissed from the hospital, being instructed to wear an elastic bandage lightly applied whilst at his work.

March 4. The patient returned from the country to-day, and stated that he had been at his work ever since leaving the hospital, and that he had not felt any inconvenience from the effects of the operation. On inspection the wounds were found to be firmly healed; there was no return of varicosity in the limb, and the middle part of the vein, which had been ligatured and left *in situ*, had completely disappeared.

In his remarks on the case, Mr. Annandale says the case was most favourable for operative interference. The healthy condition of the patient, the limitation of the varicosity to one principal vein, and the failure of ordinary treatment to relieve the symptoms, made the case in his opinion a perfect illustration of the class of this affection which is best suited for operation. Until the introduction of Lister's antiseptics, his experience of the different methods of operative interference

for the relief of varicose veins of the lower limb was not encouraging; but when the value of catgut ligature and other antiseptic details had been fully and practically tested and proved, he felt convinced that the most promising proceeding was the antiseptic excision of a greater or less portion of the affected vein.

On November 7th, 1874, a very aggravated case of varicocele came under his care; and as all the usual treatment had failed, he cut down upon the spermatic veins, exposed the largest of them, and cut out fully two inches of it, having first ligatured the vein with catgut above and below the points of its division. The result in this case was a complete cure. About six months afterwards, his patient married; and, in the years that have since elapsed, several children have been born to him. A note of this case was published in the *British Medical Journal* of January 30th, 1875. In the *Journal* of the 23d of January of the same year, Mr. John Marshall published the abstract of a clinical lecture in which he advocated a similar operation, and related a case in which he had removed successfully about nine inches of a varicose vein of the leg. Mr. Charles Steele, in a paper in the *Journal* of January 30th, 1875, advocated the removal, without the application of a ligature, of small portions, about an inch, of varicose veins, and reported several cases in which he successfully carried out this plan.

In the case of varicocele referred to, and in the present case, the operation was performed without any complication of compressing the veins by pins above and below the portion to be removed, as in Mr. Marshall's operation. The veins were exposed by dissection, any branches passing into them being ligatured and divided in the progress of the dissection. When the portion of the vein to be removed had in this way separated from the surrounding tissues, a catgut ligature was applied at both ends of the separated vessel, which was then cut away. In the case of the operation on the leg, an elastic bandage was applied round the lower part of the thigh, so as to keep the affected vein prominent.

It is interesting to note that the portion of vein lying over the tibia, and which was not interfered with, in order to avoid a cicatrix over this bone, became obliterated; and therefore the entire affected portion of vein, measuring about nineteen inches in length, was effectually removed by the operation.

Elephantiasis Arabum of the Leg, treated by Ligature of the Femoral Artery.

Mr. CROSBY LEONARD, Consulting Surgeon to the Bristol Royal Infirmary, reports (*British Med. Journal*, June 21, 1879) the following case:—

Alfred R., aged 19, was admitted into No. 14 Ward of the Bristol Royal Infirmary, on May 4th, 1868, with elephantiasis of the right lower limb. He was of dark complexion, small make, only four feet and a half in height, looked pale and weakly, had a careworn expression, but said that he had not had any serious illness, that his appetite was good, and that he felt well. He had been nearly all his life in Bristol. His father died of phthisis; otherwise his family history was good. He had been at school until eight months ago, when he was apprenticed to an engraver. When three months old, his mother noticed that the right leg was shorter than the left, and it gradually increased in size disproportionately to the left, not being painful, but giving rise to a peculiar gait. Three months ago, the enlargement began to increase more rapidly—accounted for probably by the fact that, for five months previously, he had been working at his trade, which necessitated much standing, sometimes for hours consecutively. He had not suffered much pain or constitutional disturbance; but, at intervals, pain of an aching character, and chiefly in the calf of the leg, would come on suddenly, lasting about three days, and often accompanied with sickness and feverishness. These attacks did not appear to follow any unusual exertion, or to be dependent on any exter-

nal cause. Although much inconvenienced by the size and weight of the limb, he could walk three or four miles at a stretch.

The whole of the right lower limb was hypertrophied, and felt hard and firm; the hypertrophy extended to the nates, the greatest enlargement being between the knee and ankle. There was a marked constriction at the ankle, and a prominent mass of hypertrophied tissue on the dorsum of the foot and on two of the toes. The skin on the foot and posterior surface of the leg was rough and thickened, and of a brownish colour. He had hydrocele on the right side, and thickening of the skin and subcutaneous tissue of the scrotum. The following were the measurements of the limbs, taken when in the horizontal position.

	Right.	Left.
Middle of thigh	19½ inches.	15 inches.
Knee	16 "	12 "
Middle of leg	23½ "	10½ "
Middle of foot	13½ "	8½ "
Base of toes	11½ "	—

May 9. He was ordered to remain in bed, with the leg and foot raised on an inclined plane.

20th. The foot and leg had considerably diminished in size, and the whole limb felt less hard; but the circumference of the thigh had increased, and there was more enlargement about the nates. The measurements now were: middle of thigh, 20 inches; knee, 16 inches; middle of leg, 17 inches; middle of foot, 12 inches; base of toes, 10½ inches. He was ordered up on the 22d, and on the 28th the increase in size of the thigh and nates had disappeared, and the leg was returning to its original condition of hardness. I proposed to ligature the femoral artery; and, on consultation with my colleagues, this was agreed to.

20th. The patient being under the influence of ether and chloroform, I placed a ligature of whipcord round the femoral artery, just above the sartorius. The skin and subcutaneous tissue were about an inch in thickness, looking like condensed fat and cellular tissue, infiltrated with a serous fluid, which exuded freely. The artery was small, and its pulsation could not be felt until the sheath was opened. The wound was brought together with horse-hair sutures and adhesive plaster; the entire limb was bandaged with a flannel roller and enveloped in cotton-wool. On removal to his bed, a tin of hot water was applied to the foot and one on each side of the leg, with a blanket over all. No unfavourable symptoms followed the operation; there was sickness and some febrile disturbance for three days. On the fourth day, I removed the central sutures, and purulent fluid escaped freely.

June 5. He was well in himself. The leg was rebandaged, its temperature and appearance being satisfactory. The purulent discharge from the wound was slight.

11th. The ligature came away yesterday; the wound was healing. The limb was obviously smaller. An ordinary bandage was firmly applied from the toes upwards, to be readjusted when necessary.

17th. He was allowed to get up. The wound had been healed for several days. The hydrocele had disappeared, and he said that he was quite well.

He was discharged on September 1st, and ordered to wear an elastic apparatus on the foot and leg.

The following are the measurements taken subsequently to the operation:—

	Middle of Thigh.	Middle of Leg.	Middle of Foot.	Base of Toes.
June 5. . .	19 inches.	17½ inches.	11¾ inches.	11½ inches.
" 11. . .	17¾ "	14½ "	11½ "	—
" 18. . .	17½ "	14 "	11½ "	—
July 3. . .	18 "	13½ "	11¾ "	10½ "
" 13. . .	18½ "	12¼ "	11¼ "	—
" 20. . .	18½ "	12½ "	11 "	—
" 27. . .	17½ "	12 "	11 "	—
Aug. 8. . .	17½ "	11½ "	10½ "	9¾ "
" 17. . .	17½ "	10¼ "	10½ "	—
" 29. . .	17 "	10¼ "	10½ "	9¾ "

1871.—*January 17.* He called on me, looking stouter, and said that he had continued in good health and suffered but very little inconvenience from his leg; that for many months he had been travelling with a troupe of Christy Minstrels, and taking the dancing part of the performance. His right leg measured: middle of thigh, 19 inches; middle of leg, 11½ inches; middle of foot, 10½ inches. Unfortunately, the left leg was not measured, so that the relative proportion of the two limbs is unknown.

In September, 1876, I met him in Liverpool. He said that his leg was much the same, and that he was still performing with the Christy Minstrels.

The result of this case is satisfactory. The progress of the disease was arrested, the hypertrophied condition of the limb much diminished, and the man has enjoyed good health and been enabled to lead an active life. I have found statistics of sixty-nine cases of elephantiasis Arabum, treated on Dr. Carnochan's principle; of these, forty were cured (three of them by digital compression of the artery); thirteen improved (three temporarily); and sixteen were unsuccessful.

Case of Complete Dislocation of the Head of the Radius forwards, successfully reduced twenty-four days after its Occurrence.

Dr. J. C. OGILVIE WILL, Surgeon to the Aberdeen Royal Infirmary, reports (*Lancet*, June 7, 1879) the following case of a comparatively rare injury, in which an excellent result was obtained under peculiarly unfavourable circumstances:—

A. B—, aged five, when running at school, fell over a form on March 22d, 1878. On her return home she complained of pain in her left elbow, but no attention was paid to it until the following Sunday, when, on her arm being suddenly seized by one of her parents, she cried loudly, and seemed to be much hurt. No advice was sought until the 29th March, when my friend Dr. James Brander was called in. He found great inflammatory swelling of the left elbow-joint, with some œdema of the hand and forearm. The inflammatory symptoms were so marked that, although he felt satisfied, from the very evident malposition of the limb, that the patient was the subject of severe injury of the joint, he did not feel justified in manipulating the parts so as to ascertain the exact nature of the case. Soothing applications were prescribed, and strict rest enjoined. The swelling of the tissues in the neighbourhood of the joint persisted, the skin became brawny-red, and the œdema of the hand remained undiminished. On April 8th he kindly requested me to visit the child in consultation with him, when the presence of the luxation was ascertained; but, on account of the inflamed state of the parts, it was not considered prudent to attempt reduction at the time, and we agreed to delay operations for a few days. On April 17th, inflammation having greatly subsided, I again visited the child, and, after chloroform had been administered, the following appearances were elicited: Forearm semi-pronated,

midway between complete extension and semi-flexion, with well-marked inclination outwards; external border of forearm slightly shortened; an unnatural vacuity behind and below the external condyle in the situation normally occupied by the head of the radius; an alteration in the direction of the long axis of the radius, which, when followed with the fingers, led to a point in front of the external condyle, where the head of the bone could be distinctly felt. On attempting to flex the forearm it was found impossible to bend it to a greater degree than a right angle, a feeling of locking being very manifest. Complete extension was readily achieved, and there was an abnormal degree of lateral motion.

Reduction was effected with some difficulty by extension and counter-extension, and thumb-pressure applied to the head of the radius. A rectangular splint was applied. Ten days afterwards Dr. Brander commenced passive motion of the joint; and on May 17th, when I next saw the patient, recovery was complete, the motions of the joint being in every way perfect.

Remarks.—Considerable diversity of opinion seems to exist regarding the commonness or rarity of dislocation of the radius forwards, Hutchinson¹ stating that it is not uncommon, and Erichsen² that it is the most usual of the three dislocations of the radius alone; while Boyer³ wrote: “Mais on ne connaît pas d’observation bien authentique de la luxation de l’extrémité supérieure de cet os en devant. . . . Nous doutons que cette luxation puisse avoir lieu sans une complication de fracture. . . . On ne peut donc, dans l’état présent de nos connaissances, admettre une luxation de l’extrémité supérieure du radius en devant.” Boyer’s statement that this dislocation cannot occur without fracture has been completely refuted, but the paucity of cases recorded by writers of surgical works would lead to the belief that it is rare. Sir Astley Cooper⁴ only met with it six times. Malgaigne⁵ met with three uncomplicated cases. Hamilton⁶ saw it nine times. Chelius,⁷ Bransby Cooper,⁸ and Pirrie⁹ have each placed two cases upon record. Many other isolated examples have been recorded, but I only cite the names of a few surgeons who have had great experience in this department of surgery as indicative of the comparative rarity of the lesion under notice. Apart from its frequency or infrequency the case possesses features of interest. The symptoms presented by it were those generally described, but the only one to which I would direct attention is the oblique inclination of the forearm outwards, which, as I have already stated, was well marked, and which was certainly most striking. To Malgaigne must be ascribed the credit of first describing it, and he speaks of it as “unphénomène essentiel,” notwithstanding which, with the exception of Hamilton, Lane,¹⁰ and Nélaton¹¹ (who gives “l’inclinaison de l’avant-bras en dehors” as one of the diagnostic signs between complete and incomplete dislocation forwards, it seems to have escaped the observation of other writers on the subject), some of whom give figures representing the appearance accurately enough, and who, while detailing all the other symptoms at length, yet omit to even notice the one to which Malgaigne has so forcibly alluded. In the case now under notice it was the first symptom observed, and one of the most

¹ Med. Times and Gazette, vol. i. 1866, p. 410.

² Science and Art of Surgery, 7th ed., vol. i. p. 486.

³ Traité des Maladies Chirurgicales, 2de, 4de, tom. iv., p. 289.

⁴ Dislocations and Fractures (edited by Bransby Cooper), p. 453 et seq.

⁵ Traité des Fractures et des Luxations, tom. II. p. 655.

⁶ A Treatise on Fractures and Dislocations, 4th ed., p. 579.

⁷ Chelius’s Surgery (edited by South), vol. i. p. 791.

⁸ Loc. cit., p. 457.

⁹ Principles and Practice of Surgery, 3d ed., p. 395.

¹⁰ Cooper’s Surgical Dictionary, 8th ed., vol. i. p. 540.

¹¹ Pathologie Chirurgicale, tom. III. p. 184.

telling of any of the signs elicited; it therefore seems to be well worthy of note, and deserving of more attention than it has yet received.

The next point of interest is the reduction of the luxation at so distant a period from its occurrence as twenty-four days. The difficulty of reducing even a recent dislocation of the kind is universally acknowledged, and has been well put by Nélaton in the following sentence: "Pour la luxation complète, la difficulté de la réduction, déjà signalée par Hippocrate, semble prouvée par la proportion des pièces pathologiques recueillies, comparée aux faits observés sur le vivant." Sir Astley Cooper failed in two cases, and Hamilton in one, on the seventh day, and in Malgaigne's collection of twenty-five cases, excluding six which had been unrecognized, manipulation failed in eleven, only eight of the entire number ever being reduced. The only case with which I am acquainted where reduction was successfully accomplished at a late period was one under the care of Gosset,¹ who succeeded in effecting replacement three weeks after injury. Hutchinson reduced one at a still later date, but relaxation followed. The case now recorded is, so far as I have been able to ascertain, the only one on record where manipulation was followed by permanent reposition of the bone at so distant a period as twenty-four days.

The last point worthy of mention is the after-treatment of the case, which, so far as the time of commencing passive motion of the joint is concerned, differed from that generally inculcated. The danger of relaxation taking place has been so universally admitted that it has been laid down as a rule that the injured joint should be kept perfectly immobile for a period of from four to five weeks (Chelius, etc.). In this case, however, I ventured to take a different course, for I feared that if this injunction were obeyed we would never be able to overcome the resulting stiffness of the articulation, and that immobility would be permanent, for the child was timid in the extreme, and not one likely to make use of, or to allow that interference with, her arm which would have been requisite for the restoration of the functions of the injured member. On this account I suggested to her medical attendant the advisability of practising passive movement at the end of ten days, first once a day, and then oftener, the splint being replaced immediately afterwards. Dr. Brander, agreeing with this view, and finding that all inflammatory symptoms had disappeared, and that there was no tendency to relaxation, carried out the treatment so successfully that when I next visited the patient, four weeks after the dislocation was reduced, I found that she had regained the full use of the joint, and that she could move it as easily and perfectly as she did its fellow—a result which far exceeded my fondest anticipations, and which certainly justified the departure from the hard and fast line drawn by surgical authorities when dealing with the after-treatment of dislocation of the head of the radius forwards.

Midwifery and Gynæcology.

The Discussion on the Forceps.

The discussion on "the Use of the Forceps and its Alternatives in Lingering Labour," which was opened by Dr. BARNES at the meeting of the Obstetrical Society in May, has come to a close, and we think that the result of that discussion will be to place the employment of the forceps in midwifery on a better and

¹ Cooper, loc. cit., p. 458.

more scientific basis than it has hitherto occupied. The opening address of Dr. Barnes was characterized by a moderation and breadth of view such as to make it one of the most important papers on the subject. The value of the observations of many others of the speakers upon this question cannot be overestimated, for a great number of the best-known and most experienced of English and Irish obstetricians took part in the debate.

The result seems to be in the main to support the propositions laid down by Dr. Barnes at the conclusion of his opening speech, that in almost all circumstances the forceps is preferable to its alternatives; that forceps may be not infrequently used with advantage when the head is in the pelvis and the os dilated, but that in proportion as the head is high in the pelvis and the os undilated, the necessity, utility, and safety of the forceps become less frequent. There was on the whole a marked unanimity with regard to the use of the forceps when the head is in the pelvis or on the perineum, and the opinion of almost all the speakers was in favour of a moderately frequent, as against an infrequent or very frequent, recourse to the instrument under these circumstances. Discussion chiefly took place with regard to the high operation, and the use of the instrument before the os uteri is dilated, as practised and recommended by Dr. George Johnston. It is a matter of regret that Dr. Johnston did not come over to take part in the debate, for his practice was made the subject of keen criticism and his statistics of careful sifting. Dr. Kidd pointed out some curious results which followed from Dr. Johnston's statistics with regard to the employment of the forceps before the os is dilated, but it was left for Dr. Roper to show from those statistics the grave results of the practice advocated by the late Master of the Rotunda.

It was laid down emphatically in the course of the discussion that the forceps is an instrument the use of which is to save maternal and fetal life, and it is by the results of different modes of practice that we must judge of their fitness or desirability. Forceps statistics, as a rule, are of little value, because factors play a part in one practice which are absent in another, and *vice versa*, such as difference of nationality, different external circumstances, etc.; but in the reports of the Rotunda Hospital we find statistics which may apparently be fairly compared, because the practice has been carried on in the same building for many years, and amongst the same people. And it is this comparability that gives to the reports of the institution their perhaps chiefest value. Dr. Collins was Master of the Rotunda from 1826 to 1833; he used the forceps but very rarely. Dr. George Johnston was Master from 1868 to 1875; he used the forceps very frequently. Both these gentlemen have published the results of their practice while Masters of the institution.

During the Mastership of Dr. Collins there were 16,414 deliveries. During Dr. Johnston's period there were less than half that number, 7862. From this fact alone it may fairly be expected that the hygienic conditions of the hospital were much better during Dr. Johnston's term of office than during that of Dr. Collins; for if the building were moderately full during the former period, it must have been greatly overcrowded during the latter. And such we find to have been actually the case for during Dr. Collins's mastership there was an epidemic of puerperal fever, which carried off fifty-six patients, while there was no epidemic of any kind during Dr. Johnston's mastership.

Dr. Collins used the forceps or vectis 27 times; Dr. Johnston in 752 cases—that is, in the same number of deliveries, sixty times as frequently. Here is what may be fairly characterized as the practice of two extreme views of the use of the forceps, carried out under apparently similar circumstances (with the exception already stated—overcrowding), and it is by the result to mothers and children they should be judged. In treating statistics and drawing inferences from

them, there are certain errors into which we are liable to fall, and in dealing with forceps statistics this error is not uncommon. To compare the proportion of maternal or fetal deaths in forceps deliveries is to compare the incomparable, and arrive at enormous inferences, for the frequency of the operation is not taken into account. The way to reduce mortality in forceps operations to a minimum would be to use the instrument in every case, or in simple cases only, avoiding difficult ones. What is wanted is not only a small proportion of deaths in forceps deliveries, but a small one in total deliveries, and this should be the object of recourse to the forceps. Now Dr. Collins lost 4 women of his forceps deliveries—that is, 1 in 6 or 7. Dr. Johnston lost 58, or 1 in 13 only; but though Dr. Johnston's proportion of deaths in forceps deliveries is only one-half that of Dr. Collins, yet in the same number of deliveries the former lost 89 women by forceps for each one lost by the latter.

Passing on to the total maternal mortality from all causes—forceps included—we inquire, How does the frequent use of the forceps affect this, as shown by the practice of Drs. Collins and Johnston? And we find that, out of 16,414 delivered by Collins, 164 died; and of the 7862 delivered by Johnston, 169 died—that is, in Johnston's practice rather more than two women died for each one that died in Collins's. Here it should be observed, that of the 164 women who died in Collins's time, 56 perished in an epidemic of puerperal fever.

The next important point for consideration is the amount of the fetal mortality under the two systems. The saving of fetal life is a strong reason and motive for frequent use of forceps. Now it is a remarkable fact that, while Dr. Johnston had recourse to the forceps in many cases with a view of saving fetal life, yet his reports do not contain any data whereby the total fetal mortality can be calculated; this is a strange omission in the reports, and one of which we have, by reason of its importance in coming to a correct conclusion about Dr. Johnston's practice, a right to complain. It is found that, of the 752 children born by the aid of forceps under Dr. Johnston, 54 were still-born, of which 4 were putrid. Of the 24 born by the aid of forceps under Dr. Collins, 8 were still-born—that is, a mortality five times as great as in Dr. Johnston's practice if we regard the proportion to the number of forceps cases alone, but only one-twelfth as great in an equal number of deliveries.

With regard to the number of still-births in the total number of deliveries, we find that, exclusive of premature births (before or at the sixth month), there were 1009, or nearly 6.2 per cent., under Dr. Collins. According to Dr. Barnes, the proportion of still-births to total deliveries during Dr. Johnston's mastership was 6.1 per cent.; so that in this respect a very frequent use appears to have a very slight advantage over a very rare use of the forceps.

It would be expected that with such rare use of the forceps Collins would have had frequent recourse to the perforator; and we do find that it was used by him 118 times, or 1 in 141 cases; while by Johnston it was used 28 times, or 1 in 281 cases. That is, Collins used the perforator twice as often as Johnston, and in this way probably destroyed some children which might have been saved had he possessed and had recourse to the improved forceps of the present day. A more frequent recourse to forceps would perhaps have diminished Collins's mortality, as Ramsbotham's and Roper's statistics (which are fairly comparable) at the Royal Maternity Charity appear to show; yet very frequent recourse to the instrument appears, on the other hand, to increase greatly the maternal mortality. It is impossible, while reading the reports of the Rotunda Hospital under the two systems—that of very rare and that of very frequent use of the forceps—not to be struck with the terrible maternal mortality under the latter, and it is difficult to avoid the conclusion that the grave results were the direct effects of the practice.—*Lancet*, July 19, 1879.

The Anatomical Proof of the Persistency of the Cervix in Pregnancy.

Dr. M. SÄNGER, of Leipzig, is the author of a long and excellent article on this subject in the *Archiv für Gynäkologie*, Bd. xiv., in which, after an elaborate historical criticism of this vexed subject, in the course of which the writer controverts with great ability the views of Bandl and Küstner on this subject, he gives an account of the condition of the cervix uteri in the case of a patient who had died suddenly in a convulsive seizure about the end of the ninth month of utero-gestation. Cesarean section was performed immediately after death by Professor Credé, and the state of the uterus, and especially of the cervix was carefully determined by Dr. Säger. It was found that the plicæ palmatæ of the mucous membrane of the cervix were perfectly intact, and that the membranes covered with the decidua ran closely down to the edge of the cervical mucous membrane. It was impossible to doubt where the cervix ended, and where the lower uterine segment began. There was no intermediate space, as is insisted upon by Bandl and Küstner, between what they call the inner os and ring of Müller. The anatomical evidence of the case, more especially when subjected to microscopical examination, in the most emphatic manner supports the view of the persistency of the cervix during the whole course of pregnancy until near delivery, and contradicts flatly the view, that in any sense the cervix is used up in such a manner as to amplify the lower uterine segment. In Dr. Säger's case there was no elevated ring at the junction of the cervix and lower segment of the body, as in Müller's case (lately given in this Journal, p. 595, vol. xxiv.), but the cervix and body of the uterus ran directly the one into the other in the same plane. Dr. Säger thinks that though anatomical evidence is the most reliable in deciding this question, careful clinical observations, taking care that the soft cervix is not shortened unnoticed during the exploration, is also of great value as corroborative evidence of the persistency of the cervix. The dimensions of the vaginal portion of the cervix in Dr. Säger's case are as follows: "Anterior wall, 1.5 centimetres, = .6 inch; posterior wall, 2 centimetres, = .8 inch; the breadth of its base at the highest part of the vaginal end, 2.5 centimetres, = 1.0 inch.—*Edinburgh Med. Journal*, Aug. 1879.

Cesarean Section, with Temporary Ligature of the Cervix by Esmarch's Bandage, on Account of Threatened Rupture of Uterus in a Case of Extreme Pelvic Contraction and Rigid Cervix.

In No. 12 of the *Centralblatt für Gynäkologie*, for 1879, a case is recorded by LITZMANN, of Kiel, in which this method of controlling hemorrhage at the operation was adopted without removing the uterus, as Porro recommends. Strict antiseptic precautions were observed. The uterine wound was sewed with catgut ligatures. The abdominal wound was sewed with silk stitches. The child was saved in this case. The mother died eighty-five hours after the operation under symptoms of protracted shock. Litzmann makes the following observations in conclusion upon this case: 1. The temporary ligature of the cervix had neither injured the child nor diminished the contractile power of the uterus. 2. The closure of the uterine wound by a suture had sufficiently fulfilled the means of arrest of hemorrhage, notwithstanding the subsequent loosening of the knots. The loosening of the knots was due not to the material, but to defective tying of them (a granny instead of a reef-knot). The force of resistance of a catgut ligature tied in a reef-knot was subsequently sufficiently established by us in an experiment with thick tangle-tents laid in water after tying them. 3. According to the clinical symptoms, which enable us to recognize essentially a persistently increasing paralysis of heart and bowel muscle, as well as according to the results

of post-mortem examination, the fatal issue is to be considered as due to severe shock of the nervous system, brought about partly by the enormous distension and tension of the cervical wall antecedent to the operation, partly by the operation itself. In regard to the latter, the great cooling of and unavoidable mechanical interference with the bowels in connection with the prolapse of the intestines, which was only reduced slowly with considerable force, must be considered as specially important factors.—*Edinburgh Med. Journal*, Aug. 1879.

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The Uses of the Hot-water Douche in Parturition.

Dr. ALBERT H. SMITH, in a paper read before the Philadelphia County Medical Society (*Phila. Med. Times*, Aug. 16, 1879), claims as facts proven by experience that the hot-water douche (110° to 115°) thrown upon the cervix uteri or the rim of the undilated os will stimulate contraction of the longitudinal and oblique muscular fibres of the uterus into an expulsive effort, while the circular fibres surrounding the os relax under its influence; 2d, that a similar douche thrown into the cavity of the relaxed and bleeding uterus, after the expulsion of the fœtus or the placenta, will produce prompt and vigorous condensation of the uterine walls, with an immediate closure of the sinuses; and, 3d, that a like application to a bleeding surface from laceration in the passage of the child through the pelvic canal will arrest the hemorrhage at any point, whether it be from a tear of the circular artery in the cervix, or from rupture of the vascular tissues upon the anterior margin of the vulva about the vestibule, or from the furrows upon the posterior wall and the labia.

Dr. Smith has found the application to the cervix of the hot douche thoroughly and rapidly effectual in the first stage of normal labour at full time, almost equally rapid in a rigid condition in an accidental premature labour, and more slowly—though with ultimate effect—in the induction of labour in a quiescent uterus. The method of application is simple. The patient should lie upon her back, with a bed-pan placed far under her sacrum, so that there should be no danger of the water getting upon her clothing.

The injection should be thrown into the vagina with a syringe with a rubber tube and metal nozzle with a large hole in the end, and Dr. Smith prefers the Davidson bulb-syringe, as the stream can be driven with more force, and with the intermittent action necessary with that instrument. A quart to three pints of water medicated with $\mathfrak{z}\text{ij}$ of 90 per cent. solution of carbolic acid, or $\mathfrak{z}\text{ss}$ of Labarraque's solution should be thrown into the vagina. The pipe being directed *against* the cervix, not into it. The douche may be repeated every hour or two, according to the demands of the case, or the violence of its results.

The condition in which we get the most signal effects from the douche is that of uterine inertia after the placental delivery, and in this condition Dr. Smith is inclined to think that we have an absolutely reliable agent to control bleeding—an agent which may reduce the terrors of post-partum hemorrhage, and make its fatal termination an almost impossible event if applied at any time while power of reaction is not entirely exhausted.

The nozzle should be carried on the index finger into the vagina, while the opposite hand grasps firmly the uterine globe. The fingers in the vagina may be moved about freely to break up clots rapidly, there being sometimes a complete distension of the vagina with firm, hard coagula. The stream is kept up continuously, washing out as fast as the clots are loosened; the nozzle is to be carried to the os uteri, and directed into the orifice. If the coagula in the uterus are loose and not abundant, the force of the stream may be sufficient without carrying the finger into the uterine cavity, but if the hemorrhage has been great, and the uterus largely distended, it is better boldly to introduce the pipe, guarded by the

finger, and, moving it around gently, let it, with the aid of the stream, detach from the intra-uterine surface all shreds of membrane or small coagula which may be found adherent to the surface, and which, if not removed, will act as centres of coagulation. While this is going on, the hand upon the uterine tumour feels it steadily and, generally, instantly contracting, condensing itself into a firm, hard mass, receding completely into the pelvic cavity below the brim. The water passing from the vulva is soon observed to be free from colour, and the hemorrhage is arrested. A uterus after such accident ought to be carefully watched and compressed in the hand of the accoucheur or of an assistant until all probability of secondary relaxation is over.

Finding the use of the douche so successful in controlling hemorrhage, it has naturally followed to adopt it as a preventive, and for nearly two years past Dr. Smith has been resorting to its use habitually (or at least wherever at all easily practicable) in every case of labour. The apparatus is made ready during the latter stages of labour, and so soon as the placenta is delivered, the douche is administered precisely as just directed for the relief of hemorrhage, except that it will rarely be necessary to carry the finger and the pipe farther than to the os uteri (the internal os, the external os, and cervical cavity being expanded at this stage). The vagina is thus cleansed and disinfected by the water—medicated as before—the clots are washed from the lower segment of the uterus, and the organ stimulated to contract—which it does firmly, rarely showing a disposition to relax, and often remaining low down in the pelvic cavity below the brim for twenty-four hours; and in no case so far, where satisfactorily done, has any flooding occurred after it. After-pains are diminished greatly, and the lochia but slightly abundant.

As to any danger from the absorption of the carbolized solution, it seems almost impossible, where the outlet of the uterus is so patulous as it is after labour, that any fluid could be retained in its cavity long enough to be absorbed; but the recent statements of so reliable an authority as Fritsch, that serious consequences have followed its use in some cases, would make it desirable that every precaution should be taken against such retention.

The Behaviour of Spermatozoa in the Vagina and Uterus.

Dr. D. HAUSMAN, of Berlin, in a pamphlet on this subject, gives the result of a considerable number of selected observations, made with all suitable precautions, with regard to the duration of the life of the spermatozoa in the vaginal mucus, and in that of the cervix uteri. He records seventeen observations of the cervical mucus, and twenty of that from the cervix uteri, obtained in cases in which he could rely upon the account as given as to the time of the last coitus; and in which no vaginal injections had been used, either shortly before or since the coitus. Out of a much larger number which he has made, he has rejected the greater part, because the data in these respects were not absolutely certain. These observations agree with those of Marion Sims and others, in showing that the spermatozoa perish quickly in the vagina, but retain their life and activity for a much longer period within the cervix. So soon as four hours after coitus, he found that the great majority of spermatozoa in the vagina had been seen to move, although a considerable number retained their vitality. In five cases in which the last coitus had occurred about twelve hours before the examination, the spermatozoa were found to be all dead, except in one instance, in which a few were seen to be moving amongst a large number which were motionless. The case was one in which an acute antelexion existed, which would hinder the advance of the spermatozoa towards the uterus, while the widely patulous external os would allow them readily to escape from the uterus into the vagina. In six examinations of vaginal mucus about fifteen hours after coitus, the spermatozoa were found

abundantly present in all, but none of them showed signs of life. Four examinations were made from thirty to thirty-eight hours after coitus. In one of these the vaginal mucus, which was mixed with urine, showed no spermatozoa; in two, they were abundant but dead.

In one case, however, in which coitus had taken place thirty-eight hours previously, and menstruation had commenced twelve hours later, living spermatozoa were found in the mixture of vaginal mucus and menstrual blood. The author entertains no doubt that these had penetrated into the uterus, and had been washed down again in the menstrual flow. In a case examined forty-six hours after coitus no spermatozoa could be detected in the vagina, although they were present in the cervix uteri.

In no case, even when the examination was made within an hour after coitus, was the reaction of the vaginal mucus changed from acid to alkaline, by the addition of the alkaline seminal fluid.

The general conclusion is that the great majority of the spermatozoa perish in the vagina very shortly after their deposition there, and that none of them retain their motion there, beyond twelve hours at the outside, unless menstruation has come on in the meanwhile.

To obtain the cervical mucus for examination, the author exposes the os by the speculum, wipes away from it first all adhesive vaginal secretion, taking care to brush it away from and not towards the os, and then obtains a drop of mucus from the cervical canal, by means of dry forceps, sound, or Braun's syringe. In order to obtain the secretion from the body of the uterus, he first thoroughly cleanses the whole of the cervical canal from all the secretion which it contains. As to the presence of spermatozoa in cervical mucus, the results are the following: In six observations on cases in which the external os was normal in size and position, and its secretion almost normal, at various times up to a week after coitus spermatozoa were *always* found. In ten similar cases, in which the observations were made eight and fourteen days after coitus, spermatozoa were absent. In four observations, made within a week after coitus, with the os uteri normal in size, and with normal secretions, but somewhat deviating from its normal position, spermatozoa were always found. In one observation on a similar case, made seven and half days after coitus, into case of normally patent os uteri, but decided uterine catarrh, no spermatozoa were found. In two observations on the same case, in which the external os was moderately constricted, and deviated somewhat to one side, in one instance, one and half hours after coitus spermatozoa were found, in another four hours after coitus none were found. In four observations on cases of great constriction of the external os, spermatozoa were absent in all.

The author concludes from these facts that normally, as Marion Sims also holds, the spermatozoa are not merely deposited in the vagina and left to make their own way into the uterus, but that they are impelled into the cervix at the moment of ejaculation. He attributes this in the main to the pressure of ejaculation, although he does not assume any exact apposition between the os uteri and the orifice of the male urethra. This view is confirmed by two of his observations in the case of women accustomed to use twice a day with an irrigator a vaginal injection of a litre of a solution in the one case of sulphate of copper, in the other of carbolic acid (1 in 50), both of which are well known to destroy spermatozoa immediately. Although these injections had been used shortly before coitus, abundant living spermatozoa were found in the cervical mucus within six hours after that act. He also quotes in favour of his view the success of the practice of preventing the occurrence of pregnancy by placing a tampon against the cervix uteri. He concludes that the occurrence of conception through the migration of spermatozoa from the vagina, or from more external parts, into the uterus, by their own

activity, must be regarded as an exceptional chance; and believes also that even if they should make their way into the cervix after some interval, their vitality and power of surviving many days would probably be impaired by their sojourn in the vaginal mucus, which so quickly destroys them. He infers further, that by even a moderate contraction of the external os the penetration of the spermatozoa into the cervix is rendered uncertain, that by a considerable contraction it is prevented as a rule, and that therefore the operation of incising a narrow external os for the cure of sterility is a justifiable one.

In the vaginal mucus the proportion of spermatozoa was always considerably less than in a remaining drop of semen removed from the male urethra after coitus and before the first micturition. In the cervical mucus their number was relatively very few, and the author concludes that only a very small proportion of them normally reach the interior of the uterus. Besides the living spermatozoa found in the cervical mucus, a considerable number of dead ones was always found also. The longest period after coitus at which living spermatozoa were found was seven and a half days, a period exceeded in an observation of Percy, who found them alive after eight and a half days. The longer the interval after coitus the less active were the movements of the spermatozoa, and the sooner did they cease to move after removal from the body. The author concludes that it is probable that they may retain their vitality for as much as ten days before reaching the ovum. That stringy cervical mucus is not necessarily fatal to spermatozoa was proved by an observation in which living ones were found in abundance in a plug of such mucus.

The author rejects the plan of intra-uterine injections of semen for the cure of sterility, believing that normally only a few of the spermatozoa themselves reach the body of the uterus by their own activity, leaving behind the other constituents of the semen. In cases, however, of stenosis of the internal os, or of flexion causing a narrowing of the canal near that situation, the secretions being healthy, he proposes, within the first twelve hours after coitus, to pass a large sound into the uterus, in the hope of thus carrying on beyond the point of obstruction some of the spermatozoa containing cervical mucus. He does not, however, report any result obtained in one case in which he repeatedly tried this measure.—*Obstet. Journ. of Great Britain*, August, 1879.

The Treatment of Obstinate Retroflexion of the Uterus.

Dr. SCHULTZE proposes (*Centralblatt für Gynäkologie*, No. 3, 1879), a plan for the cure of obstinate retroflexion based upon the behaviour of the uterus in involution after delivery or abortion. He has observed that the uterus in such cases, if it is kept by a pessary in normal position during the process of involution, will afterwards retain its position unaided, even though the flexion may have been of old standing, owing to the renovation of the whole tissue which has taken place. He proposes, therefore, to institute a process in some degree analogous to involution, by first of all dilating fully the cervix by laminaria tents, and then repeatedly injecting a solution of carbolic acid, or a dilute solution of perchloride of iron, the effect of which is to excite uterine contractions resembling those of labour. After full dilatation of the cervix the finger is first introduced into the uterus fully up to the fundus, and by its means reduction is effected more safely than by the sound. Moreover, if any adhesions exist, tethering the fundus backward, their existence and position can thus be clearly made out. During the process of reaction the uterus is kept in place by the author's figure-of-eight pessary, and he finds that, in this way, it becomes sensibly reduced in size, and that the pessary may eventually be dispensed with. The author considers that dilata-

tion by laminaria tents is quite free from danger if the precautions recommended by him (*Centralbl. für Gynäk.*, 1873, No. 7) be taken. In very nearly 400 cases of their use within a single year he has seen not a single one of parametritis of temperature over 38° C., or of any other abnormal reaction.—*Obstet. Journ. of Great Britain*, Aug. 1879.

Ovariectomy.

J. BOYE gives in the *Gynäkolog. og Obstetr. Meddelelser*, Band 11, an account of twenty-three cases of ovariectomy performed by him in 1876–78, five of which were followed by death. Among the recoveries were several especially difficult operations, and cases in which the patients' condition was very miserable: but the author has become more and more convinced that, so long as the patient is not nearly or actually moribund, neither her condition nor the operative difficulties of the case present any certain contraindications to ovariectomy. Among the five deaths, three occurred from tetanus, in patients operated on in different places and at intervals of several months. In seeking for the cause of the tetanus, the author directed his attention especially to the management of the pedicle. In the first case of tetanus he used the clamp; he then left off the extraperitoneal treatment of the pedicle, and used the catgut ligature: the cautery, he says, requires too long a time, and is unsafe. In the next eight cases the catgut ligature was used: but one of these died of tetanus. In this case, which was believed to be one of double ovarian tumour, one of the tumours was found to be a gravid uterus, much distended with hydramnios; it was punctured, and the operation was completed. A drainage-tube was placed between the edges of the abdominal wound. Abortion at the third month took place four days afterwards; the patient went on till the tenth day, when she was seized with tetanus, and died five days later. This mishap led Boye to desist from applying the drainage-tube immediately after the completion of the operation. In the third case of tetanus, the author was obliged to apply the clamp quickly to end the operation, as the needle-punctures in the pedicle, which was thick and vascular, continued to bleed after the ligatures were tied. The patient made very favourable progress for some days; but tetanus then set in. The author has endeavoured to discover a method of ligature which will not disappoint, so that the pedicle can be returned into the abdomen with safety, and the operation ended as rapidly as with the clamp. In the next five cases, he used silver thread; the course of the cases was favourable, but the application required too long a time, and two of the patients had pelvic abscess. He then used, in the next six operations, a caoutchouc drainage-tube; one of these cases ended fatally, but the patient was already in a hopeless state before the operation. A caoutchouc tube dipped in a solution of carbolic acid was introduced by means of a strong curette, by which, in order to prevent it from slipping, it was brought through a fold of peritoneum, along the two opposite sides of the pedicle. The ends of the tube lay parallel with each other beyond the pedicle, and were drawn as tight as possible with the fingers, while an assistant tied them together with silk thread. If the pedicle were very thick, or absent, the tube was carried across through the pedicle or base of the tumour, and was tied on both sides. In one of these cases, peritoneal abscess occurred; but the author thinks that this may have been due to other circumstances. The advantages of this method are these. 1. It can be carried out quickly, nearly as quickly as the application of the clamp. 2. It is very secure. 3. In the cases in which it is used, it was generally not followed by reaction. The first seven cases were operated on without antiseptics; and one died of tetanus; the other sixteen cases were operated on under the spray. Regarding the insertion of a

drainage-tube immediately after operation, the author thinks that it is not of any use, as it quickly becomes encapsuled with exudation, so that large quantities of fluid may remain in the abdomen without being able to escape through the tube. The author attaches much importance to bandaging the abdomen as firmly as possible. He treats pelvic abscesses by opening them as early as possible, either by means of a trocar through the rectum, or, if the pus again collect, by making an opening from the vagina and inserting a drainage-tube.—*British Med. Journal*, July 12, 1879, from *Nordiskt Med. Arkiv.*, Band. xi.

Medical Jurisprudence and Toxicology.

Case of Death from Chloroform.

Geh. Med.-Rath Prof. Dr. BARDELEBEN observes (*Deutsche Med. Woch.*, June 7) that until the year 1876 he had had the good fortune never to have met with a death from chloroform, although he had witnessed and participated in its administration in more than 80,000 cases. During the ten years that he has directed the surgical clinic at the Berlin Charité, anæsthesia by chloroform has been induced at least 1200 times per annum; and at his former clinic at Greifswald (1849-68) the average number of cases was more rather than less than 1000. No notice is taken here of his cases in private practice. But in 1876 there occurred in his clinic four cases of death from chloroform, which were published by his assistant, Dr. Koehler, in the third volume of the new series of the Charité *Annalen*. In three of these cases, other circumstances besides the administration of chloroform might have contributed to the production of the sudden death. However, the resolution was at once taken, in order to be certain that only quite pure chloroform was employed, to use exclusively the chloral-chloroform, prepared with the greatest care in Schering's factory. This chloral-chloroform (to which, on the advice of O. Liebreich, one per cent. of pure alcohol is added on first opening the bottle, in order to guard against any possible decomposition) has ever since then been employed at the Charité, as it was in the case to be related. In fact, the chloroform used in this case was taken from the bottle which was employed in a whole series of cases, and the conviction was so strong that the mishap arose, not from any impurity of the chloroform, but from individual conditions which we have not yet mastered, that this same preparation has continued to be employed. How advantageously this chloral-chloroform differs from ordinary chloroform may be recognized without any aid from chemistry. If we drop some drops into the palm of the hand and rub this powerfully, either no smell at all remains or only that of chloroform, while if we do the same with ordinary chloroform there is not uncommonly an unpleasant smell left, resembling that of fusel oil.

The case to be now related is one of especial signification, because it is in every respect so uncomplicated. The chloroform was quite pure, and only twenty-two grammes of it were employed. The patient exhibited no organic defect that could have contributed to sudden death; the operation (stretching a contracted knee) was unattended with violence, wounding, or interference with the respiratory or circulatory organs; all precautionary rules were observed—the patient lying in the horizontal position, without compressive clothing, his stomach being empty. Suddenly the heart stops; and the most energetic procedures, instituted immediately, fail to recall life. The patient, a scrofulous lad, aged twelve, was

admitted on account of a white swelling of the knee, with contraction to an acute angle. As it was deemed proper to stretch the limb, the lad was placed under chloroform two days after his admission—all the organs on examination being found in a normal condition. While Prof. Bardeleben was describing the case to the class, seven grammes of chloroform were administered under the direction of his assistant by means of the Esmarch mask. Like all children, he resisted at first, so that it is certain that all the chloroform did not reach the air-passage. When he had become more quiet, Junker's apparatus was substituted for that of Esmarch. This, especially intended for bichloride of methylene, Prof. Bardeleben finds very convenient and economical for chloroform, but employs it seldom at the commencement, owing to the relatively longer time (especially in restless children) which is required to produce insensibility with it. With this fifteen grammes more of chloroform were used—making twenty-two grammes in the whole, at the most. When the muscles began to relax the rectification of the joint was easily accomplished. A small chondroma was discovered attached to the upper part of the bones of the leg, and while this was being examined there occurred slight contractions of the flexor muscles, and the lad by screaming showed that he had become sensitive to pain. While about to resort to more chloroform during the application of the gypsum bandage it was found that the heart had ceased to act. A few seconds later the respiratory movements also ceased. The tongue was at once drawn out of the mouth, and an electrode of an inductive apparatus was applied to the region of the phrenic nerve in the neck, in alternation with the employment of artificial respiration by the postural method. Scarcely had two minutes elapsed when the lad again cried out, the respiratory movements recommenced, and the pulse could again be felt; so that it was believed that the application of the bandage was possible. The hope of this was soon dissipated, for the pulse and respiration speedily ceased again. The effects were actively resumed; and when compression of the thorax and faradization of the phrenics were found to exert no influence on the diaphragm, rhythmical compression of the thorax, with alternate insufflation of air, was substituted. The autopsy proved how instrumental these combined means were in forcing air into the lungs, these appearing of a bright-red colour, while all the other organs were filled with dark-coloured blood. After all these efforts had been pursued for half an hour without effect, and the body had become considerably cooled, all present pronounced the boy absolutely dead. Although in this stage of the case it would have been of no avail to make trial of the hypodermic injection of nitrate of strychnia, yet Prof. Bardeleben feels strongly convinced that in cases like this, in which death evidently takes place from primary paralysis of the heart, and not from asphyxia, besides every care being taken to keep the air-passages free, and to employ artificial respiration, the hypodermic injection of strychnia should also be practised, its efficacy as an antidote to chloroform having been made known to the Berlin Medical Society ten years since by Prof. O. Liebreich.

At the autopsy the principal circumstance observed was the great fluidity and dark colour of the blood. The veins and sinuses of the brain contained a great deal of blood, as did the tela and choroid plexus; and the vessels of the substance of the brain were also in a lesser degree distended. All the cavities of the heart, of which only the left ventricle was contracted, contained a considerable quantity of this dark fluid blood, not a trace of coagulum existing. None of the organs exhibited any diseased appearances.—*Med. Times and Gazette*, Aug. 2, 1879.

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Anatomy and Physiology.

On the Physiology of the Liver.

M. PICARD, of Lyons, communicated (*Le Progrès Méd.*, May 3, 1879) some experiments which appear to show that section of the nerves going to the liver does not cause diabetes. The nerves supplying the liver do not exercise any great influence upon the circulation in the organ. In a previous communication, he showed that section of the nerves supplying the liver did not cause any increase in the amount of urea in the blood. M. Picard finds that dogs survive the section of the nerves, and that in animals which have undergone this operation the amount of sugar in the urine, and the quantity of bile secreted, are nearly the same as in the normal individual. The liver appears, therefore, to be to a certain extent independent of that part of the nervous system which directly innervates it. The blood appears to lose in the liver a portion of its hæmoglobin. After section of the nerves of the liver, subsequent stimulation shows that they have only a dull sensibility, whilst excitation of their distal extremities produces no immediate or marked effects. The flow of blood through the gland does not, so far as can be determined, depend upon the nervous supply, but it is more abundant during expiration. Prolonged stimulation of the peripheral extremities of the hepatic nerves causes a change in the urine, which becomes diabetic. In brief, therefore, the experiments of M. Picard have afforded the following results: The liver probably contains secretory fibres, such as is shown by the fact that there are nerves which bring about the appearance of sugar in the urine. It receives but few sensory and vaso-motor fibres, and its functional activity is in opposition to the reflex action exerted by other organs whose circulation is to some extent correlative to its own. Digestion, which increases the functional activity of the glands, stomach, etc., and causes a congestion of the intestine, produces a more active circulation in the portal vein and liver, and gives an impulse to the functions of the whole organ. The glycosuria, on the other hand, appears to be directly dependent upon the hepatic nervous system, through which it may be called into increased activity.—*London Med. Record*, August 15, 1879.

On Fecundity and Sexuality.

M. GAETAN DELAUNAY, in a recent communication (*Le Progrès Médical*, May 31, 1879) states that fertility, which is unlimited in the lowest classes, decreases as the human race is approached. The inferior races are more fruitful than the superior; the black, yellow, and other races being more fertile than the white. Amongst Europeans, the Russians, Spaniards, and Italians, *i. e.*, the nations which are the least advanced in civilization, are the most fertile; whilst the least fertile are those furthest advanced in the scale of evolution, *viz.*, the

French and Swiss. It has been stated that the relative sterility of France was voluntary, but M. Delaunay refutes this accusation. Fertility diminishes in a nation as it becomes more highly civilized. Intellectual persons, and those who live in towns, have a smaller number of children than the ignorant and labouring classes. The young and the old are more fertile than adults, and the same is true of the weak as opposed to the vigorous. Athletes and persons who perform much brain work have but few children, as has been shown by Dr. Drysdale. The lower tissues reproduce themselves more readily than the higher ones. A plant or animal which receives too great a supply of food becomes infertile. Thus, dogs belonging to the poor produce more offspring than others of the same race which belong to the richer class. The wretched and badly fed are more fruitful than the wealthier, and, therefore, fertility has no relation to the means of livelihood. Summer and warm climates increase the fertility. In short, therefore, fertility being at its maximum in those least advanced upon the path of evolution, and at its minimum in those furthest advanced in the same scale, it may be regarded as being in an inverse ratio to the evolution. *Sexuality*.—The lower races produce more females and the higher nations more males. Young and old animals bear more females than males. From the age of thirty-five onwards a man begets more girls than boys. The vigorous produce boys, and the weakly girls. Under the first empire, when all adult males were serving in the wars, a very large majority of girls were born. Years of dearth favour the procreation of girls, and years of abundance of boys. Idleness tends to cause the birth of females. Persons who perform much mental labour are more liable to produce girls than boys. A majority of girls are born in summer and in warm years, and of boys in winter and cold years. In short, therefore, an individual of a less high degree of evolution produces girls, of a higher degree boys, whilst, at a still higher degree, he again begets girls. In the same way, one who is fed too little or too much produces girls, boys being born when he is simply well fed. Upon this communication M. Galippe remarked that the biological law laid down by M. Delaunay was wrong, inasmuch as it was unsupported by conclusive facts. It was, moreover, entirely incorrect in regard to England, the English being certainly far advanced in the scale of evolution, whilst they produce a large number of children.—*London Medical Record*, August 15, 1879.

The Transformation of Glycogen.

Dr. SEEGEN has published, in Pflüger's *Archiv für die gesammte Physiologie*, Band xviii., a series of experiments on the influence which saliva and pancreatic juice exercise on glycogen. It has been believed till now that saliva, pancreatic juice, and diastase are able to convert glycogen entirely into grape-sugar. Dr. Seegen's experiments gave results which differ widely from the opinion before mentioned. He sums them up in the following paragraphs. 1. As soon as saliva or pancreatic juice comes into contact with a solution of glycogen, transformation into sugar begins. In about thirty or forty minutes, the glycogen has disappeared; the opalescent solution has become quite clear. The glycogen at this moment is transformed into sugar and into Brücke's achroodextrin. The transformation of a part of the dextrin continues for twenty-four to forty-eight hours. 2. The quantity of sugar finally formed does not correspond to the quantity of glycogen used. With the aid of Fehling's copper solution, one is able to discover only forty or fifty per cent. of the quantity of sugar which ought to be found if the whole bulk of glycogen has undergone transformation. 3. The sugar formed is not grape-sugar. Its power of reducing oxide of copper is about two-thirds of the reducing power of grape-sugar, and its power of turning the plane of polarization to the right is nearly three times as great as that of grape-sugar. 4. Diastase

acts in the same way on glycogen. 5. Starch also is not entirely transformed into sugar by the action of ferments. The sugar formed is not grape-sugar. Its power of reduction is one-third less and its power of rotation much greater than that of grape-sugar. 6. Dr. Seegen proposes to call the sugar produced by the action of ferments on starch and glycogen ferment-sugar. 7. Glycogen boiled with acids is changed into grape-sugar, but only about 75 per cent. of the glycogen is transformed into sugar. Only by boiling glycogen with acids in hermetically closed glass tubes for thirty-six to forty-eight hours, the whole bulk of glycogen is transformed into grape-sugar. 8. When the action of ferments or acids on glycogen is at an end, there remains in solution, besides sugar, a sort of dextrin, which differs from Brücke's achroodextrin in various ways. It is very soluble in alcohol, and ferments are unable to turn it into sugar. Considering the resistance it opposes to the action of ferments and acids, Seegen proposes to call it dystropodextrin. 9. The sugar found in the liver is grape-sugar. Dr. Seegen refers to a paper which he has lately published in *Pflüger's Archiv*, Band xiv, and in which he states that it has as yet been impossible to isolate a liver-ferment. What has been found by Wittich's or Bernard's process has been glycogen containing a trace of a fermenting substance. The same component has been extracted out of a boiled liver, where the ferment, if it had existed, would have been destroyed by the boiling process. Such traces of ferment, or rather such a minimal fermenting action, belongs to nearly all the albuminous tissues; and Seegen has found that even albumen obtained in the laboratory from blood exercises the same diastatic action, which in its intensity cannot be compared to the action of a ferment. Considering that a real ferment has not yet been found in the liver, and considering that the sugar of the liver differs from the sugar formed by real ferments, Seegen thinks a doubt might be justified whether the formation of sugar in the liver is to be attributed to the action of a ferment.—*British Med. Journal*, June 21, 1879.

Materia Medica and Therapeutics.

On the Physiological Action of Salicylate of Soda.

M. OLTRAMARE (*Le Progrès Médical*, June 14, 1879) a pupil of Professor Chaveau, has made a large number of experiments upon animals for the purpose of determining the physiological action of salicylate of soda. When introduced directly into the veins, the drug constantly increases the pressure, the number of pulsations, and the systolic force of the heart; this effect is transitory, and is due to a direct stimulation of the heart, and probably, also, of the motor centres. At the same time, the rapidity of the current of blood, as measured by means of the hæmodromograph constructed by Professor Chauveau, increases gradually; this second effect, being due to a dilatation of the bloodvessels, is much more persistent than the previous one. Under the influence of repeated injections, the irritability of the heart is diminished, and when the poisonous dose is reached, that is to say, one gramme per kilogramme of the body weight for the dog, ass, and horse, irregularities of the pulse occur, it becomes intermittent, the blood-pressure falls rapidly, and the heart ceases to beat. The animal dies from paralysis of the heart, and not, as has been stated, from asphyxia. The examination after death shows that the abdominal viscera, in relation with the vascular phenomena observed during life, are intensely congested. If the medulla be divided, a very marked condition of anæmia succeeds the hyperæmia; it therefore appears,

according to M. Oltramare, that salicylate of soda acts upon the vaso-motor centre in the medulla. If a parallel be established between the anatomico-pathological processes of acute articular rheumatism, the physiological effects of salicylate of soda and its therapeutic properties are incontestable. M. Oltramare believes that he can prove that this remedy acts by substituting a state of general dilatation of the capillaries for a localized hyperæmia. So long as the rheumatic lesions are of a purely vascular nature, salicylate of soda appears to possess a therapeutic value, but when disorders of nutrition intervene, it is of necessity inefficacious. It is for this reason that salicylate of soda is useless in the subacute or chronic forms of rheumatism, and this want of success in such cases seems to support the theory here advanced.—*London Med. Record*, Aug. 16, 1879.

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Experimental and Clinical Study of Conia and its Salts.

M. TIRYAKEN has studied (*Le Progrès Médical*, June 14, 1879) the alkaloid which forms the active principle of *Conium maculatum*. He finds that the conia whose action has hitherto been investigated is not a pure alkaloid, for it is mingled with an empyreumatic substance, whose effects, comparable with those of urari, have contributed to the belief that conia was possessed of much more intensely poisonous properties than is really the case. Conia has, however, a local irritant action which prevents its being administered by hypodermic injection. In poisoning by conia three phases can be distinguished. The first is characterized by depression and lowness of spirits, rapidly succeeded by paralysis of motion, and moaning during inspiration. During the second stage the moaning becomes gradually louder, whilst the respiration becomes feeble, incomplete, and hurried, the pulse-rate and the reflex irritability being at the same time increased. This stage is followed by one of collapse, accompanied by slowing of the pulse and respiratory rhythm, and ultimate death or recovery according as the elimination of the poison is impeded or hastened. From these observations it is concluded that conia acts upon the central nervous system, and is not a muscular or cardiac poison. M. Tiryaken has also studied the action of the hydrobromate and hydrochlorate of conia. He finds that the action of these salts is comparable with that of the alkaloid, but that they are so feeble that he is able to prescribe a gram of the hydrobromate in 3-5 doses in twenty-four hours. This remedy may be employed with advantage in neuroses, and in the spasmodic affections of chronic bronchitis.—*Practitioner*, September, 1879.

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On the Physiological Facts in regard to Anæsthesia.

M. SIMONIN believes (*Le Progrès Médical*, May 3, 1879) that of the various symptoms of etherization three appear to predominate. By means of these symptoms a diagnosis of the various degrees of etherization may be made, and by them the surgeon may be guided in the administration of an anæsthetic, and may obtain the full effect without risk of accident. The symptoms alluded to are, firstly, the manifestation of peripheral insensibility, markedly in the temples and cornea; secondly, the condition of the muscles of the lower jaw; thirdly, the state of the pupils, more especially in regard to their contraction, and to the relaxation of the iris. The conclusion of the author in regard to these points is, that when the peripheral insensibility sets in, the patient is in a fit state for the surgeon. The patient is in no danger so long as the jaws remain closed. Lastly, the contraction of the iris is a nearly constant symptom of the surgical period of etherization, and the maintenance of the contraction shows that the anæsthetized patient is not in any danger. But dilatation of the pupil should cause uneasiness, or at any rate should provoke the greatest attention on the part of the surgeon to the state of his patient.—*London Med. Record*, Aug. 15, 1879.

The Effect of Anæsthetics on the Circulation.

The comparative effect on the circulation of intravenous injections of chloral, chloroform, and ether, has recently been studied by M. ARLOING, and an account of his researches has been communicated to the Académie des Sciences. A solution of chloral was employed of the strength of 1 in 5, and a mixture of chloroform and ether with twenty volumes of water. Large animals (horses or dogs) were employed for the experiments. The needful dose was given in divided portions, and injected slowly into a vein far from the heart. Cardiographic tracings with the apparatus of MM. Chauveau and Marey show that the three substances do not all produce the same effects. All cause an acceleration of the cardiac pulsations, but this is more considerable, and occurs more promptly, with chloroform than with others. Chloral produces, first, a retardation. Both chloral and ether lower the pressure in the right ventricle, while chloroform increases it. Chloroform and ether augment the force of the heart's contractions, while chloral lessens it. Hence it seems legitimate to conclude that the pulmonary circulation is quickened by chloral and by ether, and is retarded by chloroform.

By means of a new hæmodromograph of M. Chauveau the modifications in the pressure and in the rapidity of movement of the blood in the arteries have been recorded. Injections of chloral cause, first, a slight increase in the intra-arterial pressure, as well as in the quickness of the cardiac systole, and a diminution in the frequency of the heart's action—i. e., an increase in the diastolic pause. Soon a fall in pressure and an increase in frequency result, and these continue as long as the anæsthesia. Chloroform often causes, at the outset, a slight dilatation of the vessels, soon replaced by a still stronger contraction, which makes itself evident in spite of the increase in the force of the cardiac systole. During the third period of chloroformization the vaso-constrictive action lessens, but does not give way to an opposite action—at least, unless the dose of chloroform is poisonous. Ether affects the arterial circulation in the same way as chloral: in extreme etherization the accelerated pulsations present a marked microtism; and there is a retrograde movement at each pulsation, as if the column of blood oscillates in the large arteries.

The venous pressure during chloralization is increased, and the tracing obtained may present arterial pulsation. With chloroform the venous pressure varies, just as does the arterial pressure. In etherization the two at first vary in the same manner, but later the venous pressure is increased, just as in the administration of chloral.

The conclusion from these facts is that the movement of blood in the capillaries lessens slightly at the commencement of chloralization and of etherization, and undergoes subsequently a considerable increase. The capillary flow first suffers a temporary augmentation by the influence of chloroform, and quickly lessens, to increase slowly at a later period, but without attaining always the normal rapidity.

Of the state of the cerebral circulation during the sleep of anæsthesia little is known. According to some observers there is at first hyperæmia, and, when sleep is well established, there is anæmia. According to others, even the profound sleep is accompanied by cerebral hyperæmia. The means of observation hitherto employed have been either insufficient or have been liable to error. The best method is to study the changes in the rate of movement of the blood in the artery which carries it to the brain, leaving the cranium intact, and to compare these changes with those in the pressure within the vessel and in the corresponding vein. Such an investigation shows (1) that all anæsthetics do not produce the same effect on the capillary system, and that it is impossible to reason from

one anæsthetic to the others; (2) that sleep from chloroform is accompanied by anæmia, sleep by chloral and ether by hyperæmia of the brain. Hence the conclusion seems to be inevitable that the modifications in the cerebral circulation are not essential to the anæsthetic sleep, and therefore cannot be regarded as its cause. It is probable, from a comparison of the results of ophthalmoscopic examinations with these observations, that the sleep induced by chloroform is that which presents the greatest analogy with natural sleep.—*Lancet*, Sept. 6, 1879.

The Effects of Koumiss on the Urine in Health and Disease.

At a recent meeting of the British Medical Association (*British Med. Journal*, Aug. 23, 1879) Dr. V. JAGIELSKI gave a description of koumiss, its character and composition; its constantly changing nature, with the different varieties thus created; and their several denominations, according to consistency and age. He then enumerated the various solid constituents of koumiss—as casein, fat, albumen, lacto-protein—and considered separately the products of fermentation, as—first, carbonic acid; secondly, lactic acid; and thirdly, alcohol; and commented upon the physiological effects of each, particularly upon the brain, heart, and kidneys; showing the changes which occur in the urine of a healthy subject during a course of koumiss, in regard to quantity, colour, and specific gravity, whereby a tolerably close estimate may be made of the percentage of solids and normal constituents contained in the secretions of a healthy kidney—when the conditions of pressure under which they are developed are at the same time adequately considered. The author stated that with those who drink koumiss freely, the diuresis is augmented (on an average, 1800 c. c. of urine voided in twenty-four hours; in some cases, about 1500 only), the desire to micturate becomes more frequent, and there exists a certain sensation of weight and pressure in the region of the bladder; but these symptoms disappear after a lapse of two or three days, leaving the urine clear and its reaction sour. The density or specific gravity of the urine increases, too, on the average to from 1019 to 1022 c. c., notwithstanding the increase in quantity voided. The urates, phosphates, and sulphates show an increase under koumiss; whilst the proportion of uric acid to urea diminishes. Dr. Biele estimated the elimination of uric acid, in a case where koumiss was beneficially taken for fifty days, as proportionate to each ten *kilogrammes* of bodily weight; and, according to Palubienski, about fifty-seven *grammes* of solids were obtained from the urine of one patient within twenty-four hours. The chloride of sodium varied greatly, individual idiosyncrasies determining the individual urinary capacity. The diseases in which koumiss is generally useful, and in which the urine is found to be of low specific gravity, are not necessarily those of the kidneys, but may also arise from the condition of the blood and the state of general nutrition, or of the nervous system. Dr. Jagielski classified—1. Diseases with increased secretion of urine of *low* specific gravity; 2. Diseases with increased secretion of urine of *high* specific gravity; 3. Normal secretion and sediment in urine; 4. Diminished secretion; 5. Complete suppression of urine. The *quality* of the blood increases the *quantity* of the urine secreted; but it is advisable to ascertain the individual standard in each case before treatment by koumiss, so that subsequent changes may be clearly evidenced. In cases of anæmia, where the specific gravity of the urine was 1008 to 1012 before taking koumiss, it rose, after fourteen days, to 1018–1019. In chlorosis, all the symptoms improve with the appearance of a higher specific gravity, consequent upon three or four weeks' use of koumiss; the amount of urine and its colour becoming normal. The low specific gravity of chronic albuminuria advances under koumiss from 1010 or 1012 to 1018–1020. Dr. Jagielski believed the nervous influence to perform an

important part, especially in cases of great weakness, in which fear or alarm may stimulate the flow of urine. This nervousness, however, with its effect upon the urine, is readily amenable to the action of koumiss, and disappears with the increase of the bodily weight. As the solid constituents of the urine march *pari passu* with the gain of flesh, their specific gravity becomes of the highest diagnostic importance. Dr. Jagielski illustrated these views by several cases in his own practice, and by others published in the medical journals. The low specific gravity indicates relative decrease of the normal solid constituents, especially urea, uric acid, and extractive matters. The amount of albumen may vary considerably at first; but, with the exclusive use of koumiss for a day or two, both the volume of the urine and its solids augment with the increase of bodily weight as the albumen disappears. In œdema and anasarca, koumiss often assists in diminishing or removing dropsical accumulations, increases the heart's action, and promotes the general return of strength. Amongst the diseases with increase of urine and of its specific gravity, Dr. Jagielski mentioned several cases of diabetes mellitus in which both quantity and specific gravity diminished, whilst bodily weight increased and strength returned—notably, in those instances in which gastric derangements prevailed to the extent of vomiting any other food. In diseases of the kidneys, such as hyperæmia, hæmaturia, acute nephritis, etc., the use of koumiss had, even in very desperate cases, been effectual in saving life; in all of these, the secretion was either considerably diminished, or for hours altogether suppressed, headache and stupor were manifested, and the urine loaded with blood and albumen to complete coagulation on boiling in a test-tube. Where milk and all other food was rejected by the stomach, koumiss was retained, and from the first afforded hopes of recovery which could not previously be entertained. In smallpox and scarlet and typhoid fevers, where similar conditions exist, equally beneficial results had been obtained. The great diuretic power of koumiss, together with its easy digestibility and nourishing properties, render it available and useful even in those cases which otherwise may fairly be pronounced hopeless.

The Use of Duboisia.

At the recent meeting of the British Medical Association, Mr. NETTLESHIP, of London, stated that he had employed a four-grain solution of sulphate of duboisin in a few cases, and had repeatedly got well-marked toxic effects resembling belladonna poisoning. In more than one case there had been considerable delirium. These effects had followed sometimes from the use of only a drop or two or three to the conjunctiva. Mr. NettleSHIP attributed this to the fact that his duboisia was an extremely pure and therefore potent solution, made from a dry crystalline sample. Isolated cases had been reported by others, but these formed an almost continuous series.

Mr. SWANZY thought it right to mention that in one case, that of a boy aged 12, where duboisin had produced symptoms of poisoning, including delirium, the patient died within a few weeks of meningitis. No head-symptoms had shown themselves until the duboisin had been used. Only a few drops in all of a four-grain solution had been instilled.—*British Med. Journal*, Aug. 30, 1879.

Cases of Toxic Symptoms from the Use of Duboisia Drops.

In the following cases, under the care of Mr. NETTLESHIP, at St. Thomas's Hospital, constitutional symptoms, varying in severity from slight transient giddiness to violent delirium, followed the use of this new mydriatic. It may be stated that the preparation was a perfectly clear, colourless solution of sulphate

of duboisin, four grains to the ounce, very carefully made by Mr. Plowman, the apothecary to the hospital, from a dry crystalline sample supplied by Messrs. Corbyn & Co. In Case 8 the solution was obtained from Mr. Martindale. The preparations, therefore, may be taken as quite pure. When the supply of the pure alkaloid becomes large enough to insure uniformity of strength in the solutions made by different chemists, it may be unsafe to prescribe a four-grain solution of sulphate of duboisin, and the use of the drug for rapidly dilating the pupil or paralyzing the accommodation in the out-patient or in the consulting-room may not be free from disadvantage. It remains to be seen whether a solution of duboisin, weak enough to be free from risk, will have any advantages over atropine:—

Case 1. E. H., aged seventy-six, male, with cataracts, was admitted on March 25th. Two atropine drops (four grains to ounce) were put into his eyes; half an hour later, the pupils not being widely dilated, four drops of duboisin solution were used (single drops from a very small pipette). Half an hour afterwards the man was taken from his seat to go into the dark room, when he seemed drowsy, staggered, and said he felt giddy. After waiting a few minutes another attempt was made to remove him, with the same result; he staggered over to his right side, and had evidently lost power in his legs, the right being the weaker; he was then taken to the ward. When seen by Mr. Nettleship one hour later he was delirious, constantly picking at things and talking of home, and had been struggling and requiring two nurses to hold him. During the night he became more violent. Next day he was much better; could stand, but felt weak, and complained of his fingers feeling numb.

March 27th. Almost well again.

He remained in the hospital for three months, and complained to the last that his fingers were numbed; "they were all right till I came here," he said. Whilst delirious he was seen by Dr. Sharkey, resident assistant-physician, who found the urine free from albumen. He was a feeble old farm labourer. A four-grain solution of sulphate of atropine was used three times a day for many days after the extraction of his cataract without any symptoms showing themselves.

Case 2. H. L., aged sixty-seven, carpenter, was admitted for injury to the left eye nineteen days before. The globe was enucleated. Three weeks after the excision iritis came on in the right eye, and, as the pupil would not fully dilate with atropine, duboisin solution was ordered to be used every two hours (as an out-patient). It was begun on April 9th, in the afternoon. Next day he was admitted as an in-patient at 4 P. M., and duboisin was continued every two hours from that time. The patient was very restless all night, but he calmed towards morning. At 10 P. M. on the following day he became restless and partly delirious, pulling the clothes, and required to be watched all night. Duboisin was stopped at 2 A. M. on the morning of the 12th. At noon of the same day he was not delirious, but answered questions incorrectly, and forgot he had taken his breakfast. There was no special dryness of mouth. Duboisin was used twice again, after which he became delirious, and in the night required a porter to watch him.

At 2 A. M. on the 13th he had morphia subcutaneously injected, and also a small opium draught. He slept from 5 A. M. to 6 A. M. Gradually improved. He slept well that night, and next morning was quiet and rational. He did not remember what had happened. Sulphate of atropine (four grains to the ounce) was used from this date several times daily for more than a week, without producing any toxic symptoms.

Case 3. E. T., aged seventy-five, female, May 6th, attended as out-patient with cataracts. One small drop of duboisin to each eye quickly caused very wide

mydriasis. In two or three hours after instillation she staggered in walking, and said "she felt as she had never felt before;" there was slight incoherence of speech; no absolute delirium. She was admitted to the ward, and next morning was herself again.

Case 4. R. B., aged sixteen, female, had ulcer of cornea. On May 10th atropine was ordered three times a day; increased next day to every two hours. In the afternoon of the 12th the pupils were only half dilated, and duboisin was ordered six times a day. The patient was restless all night, having slept well before. In the morning she complained of giddiness and dryness of throat; duboisin was used twice more (five times altogether). The pupils were fully dilated, and duboisin discontinued. The symptoms quickly disappeared.

Case 5. C. H. N., aged twenty-five, a medical student, used duboisin in order to try the rapidity with which it paralyzed the accommodation. A drop of solution of duboisin was applied at 2 P. M., and repeated twice at intervals of half an hour. At 4 P. M. he felt dizzy and made some inaccurate remarks, which he did not afterwards remember. One or two hours afterwards he was able to go home without assistance, and felt quite well next day.

Case 6. A. S., aged twenty-eight, female with ulcers of cornea. At first used duboisin six times a day, and after two days thrice a day; the sixth day it was used only once, and then discontinued because the patient felt dizzy and complained of dryness of the mouth.

Case 7. J. E., aged thirty-six, male, had traumatic cataract of some years' standing. Duboisin was used for examination. The patient said it made him feel "tipsy," and he became very pale, and could not walk straight. No tendency to delirium. He was soon quite well.

Case 8. Mrs. —, aged thirty-five; myopic astigmatism. Two single drops of duboisin solution were applied to the right eye. After waiting half an hour she felt uncomfortably giddy, and had difficulty in walking quite straight. There was no dryness of throat. After examination she rested for an hour, but was still giddy when she left. On her way home she felt as if she did not know where she was going, and on that and several succeeding days her head felt vacant, and she found herself not understanding or not hearing what people said. She is tall, pale, nervous, and not in strong health.—*Lancet*, Sept. 6, 1879.

Intravenous Injection of Milk.

Mr. A. S. MELDON reports (*British Med. Journal*, Aug. 30, 1879) five cases of intravenous injection of milk. The first was one of exhaustion after typhoid fever. The second and fifth were patients in the last stage of phthisis, and in both life was considerably prolonged by the operation. The third and fourth were cases of anæmia, in both of which life was saved by the transfusion of milk. In the last three cases, goat's milk was used, to which was added carbonate of ammonia.

On the Prolonged Antiseptic Bath.

In an article in the *Archives Générales* for July and August, Prof. VERNEUIL observes that this mode of treating wounds is not now much resorted to, and is suitable only for a small number of cases; but for them it is of such utility, and so superior to all other means of local treatment, that it deserves a very high place as a therapeutic agent, and he the more readily refers to it that surgeons of the present day, in their enthusiasm for new modes of dressing, seem to have forgotten its existence. Prolonged—or as at that time they were employed, permanent—local baths have been used since 1854 by Valette, Langenbeck, Zeiss, and

others, after amputations and for wounds of the extremities, and some excellent results have been obtained; and in 1856 Prof. Verneuil commenced his trials with them. In one case of a fracture of the forearm, the limb was retained in the bath uninterruptedly for twenty-eight days, and in many cases of wounds of the hand and forearm the bath was continued for from four to twelve days. This mode of treatment superseded that of continuous irrigation, which, so useful in contused wounds of those parts conveniently placed for its adoption, proves of little avail in those with which the water cannot come in direct contact. In the bath every part of every kind of wound is accessible. In later times, however, Prof. Verneuil has greatly modified this means. For the cumbrous apparatus formerly in use he has substituted ordinary vessels for the reception of the hand and arm, and instead of the permanent bath, which was most inconvenient in application, especially during the night, he now uses simply a bath prolonged for two or three hours only, and repeated two or three times a day. It was found also that this prolonged bath could not be conveniently applied for wounds of the lower extremities, and of late years it has been entirely confined in its application to those of the hand and arm.

The patient may take the bath in bed, either in the sitting position or with his shoulders propped up; or, if strong enough, he may sit in a chair. The water should be of a medium temperature, which may be left to the patient to regulate in such a manner that it feels to him neither too cold nor too warm. Of late years Prof. Verneuil has added disinfecting liquids to the bath, viz., solutions of either the chloride of soda of Labarraque, carbolic acid, or hydrate of chloral, and employing from 10 to 20 per cent. of the chloride, and from 1 to 2 per cent. of carbolic acid and of chloral—varying the doses of the antiseptic according to the effects desired to be produced and the duration of the immersion. Thus, with an infected wound, with gangrene, a more concentrated bath of short duration is employed, as also when the weakness of the patient prevents too prolonged or too frequent baths. Less strong doses are employed when the primary putridity is destroyed, and when the patient is able to continue the bath for four or five hours together. Prof. Verneuil habitually employs carbolic acid, but for those to whom its smell is repugnant he substitutes the hydrate of chloral. Labarraque's liquor is especially useful when gangrene is present, as it has singular power in aiding the elimination of eschars. But many persons can ill bear the smell of the chlorine, and the unpleasantness from this can be greatly diminished by covering the bath with thick cloths, or closing it by a cover. The bath of carbolic acid shows the error of those who regard this substance as an irritant. Over and over again the hand and forearm have continued in a 1 per cent., or stronger, solution for two hours, and almost always the patients have declared that they felt considerable relief from it. In the interval of the baths, the limb, immobilized or not, according to the nature of the case, is conveniently placed on a support, and covered by a compress of muslin folded several times and wetted with the liquid of the bath. A layer of wadding, and over this some oiled silk, complete the dressing. Prolonged immersion gives to the wounds, and especially recent ones, a somewhat pale aspect, but this appearance is of short duration, and in general, when the cleansing of the wound is over, the granulations have an excellent appearance, and assume a vermilion colour scarcely an hour after leaving the bath. The quantity of pus secreted is generally small, and it is especially remarkable for the absence of odour, which is also the case with the eschars. In one of the cases related there was suppuration of the whole hand, and gangrene of the index finger; and yet, although the patient lay in a very small room, when the limb was exposed not the slightest odour could be perceived beyond that of the carbolic acid. Whatever may be the sinuous dis-

positions of the wound, the pus and mortified tissues are so thoroughly disinfected, that neither injections into these cavities nor pressure for the expulsion of the pus are required. "I have only to quietly wait until the eschars are detached of their own accord. In a word, I apply here that calculated abstention, that absence of all meddling with the parts, which I so earnestly recommend for all wounds in general." Nothing is easier than to keep in a state of the extreme cleanliness wounds which pass two or three hours in tepid water—its sufficing to let fall a streamlet of the water from a sponge on the injured parts and the orifices of any fistulous tracks, gently wiping the neighbouring uninjured parts. It is not possible to say beforehand how long these prolonged antiseptic baths ought to be continued. They must at least be used for a sufficient time to produce the complete cleansing of recent wounds, and the absolute and durable disinfection of old wounds. But so easy is the means in its application, and so great is the relief which it generally procures, that its use may be continued for a long period. Ordinarily, and that even in the most serious cases, the baths are not required after the fifteenth or twentieth day, when, if it be deemed desirable, the wadding bandages may be applied, as these enable the patient to take exercise more easily.

Prof. Verneuil relates several illustrative cases, and terminates his paper with the following conclusions:—

"The prolonged and repeated antiseptic bath is of great utility in a great number of surgical affections of the hand, forearm, and elbow. It prevents traumatic fever almost certainly in cases of recent accidental or operative wounds seated in healthy tissue, and in this respect rivals the classical continuous irrigation and the wadding dresses. It possesses the same preventive property in cases of operations practised in the midst of more or less old morbid centres (*foyers*) impregnated with purulent and putrid substances, and thus renders more innocent excisions and extirpations of bones, amputations in gangrene, drainage, counter-openings, etc. In this respect it is very superior to rival modes of dressing. Finally, it possesses still more than these the inestimable power of arresting acute or chronic septicæmia by so modifying recent or old pathological centres that the production or the penetration of the septic poison is prevented, or at least impeded. The preventive or curative action of the antiseptic bath on surgical fevers enables us to study with care and profit the qualities and actions of the poison concealed in wounds, and to dissipate some of the obscurity which still prevails in the doctrine of septicæmia.—*Med. Times and Gaz.*, Sept. 6, 1879.

Medicine.

On Local Temperatures in Disease.

Professor PÉTÉR (*Revue des Sciences Médicales*, No. 27) has for some time been studying, by a long series of researches, morbid local temperatures. In his first communication to the Academy (*Bulletin de l'Académie de Médecine*, 2d series, vol. vii. No. 8), he occupied himself exclusively with the temperature of the chest in cases of acute pleurisy, and variations of the temperature, according to certain fixed conditions.

In his experiments, Dr. Pétér employs the ordinary medical thermometer, which he places successively in the same intercostal space of the diseased side and the healthy side, and then in the axilla of the healthy side. The following are

the principal results obtained by this method : First—outside of the pleurisy the parietal temperature is always higher than the average temperature. The local excess of heat is from five-tenths of a degree to upwards of two degrees, and sometimes exceeds this figure. Second—the elevation of the temperature increases with the effusion ; that is to say, the greatest elevation of local temperature corresponds to the period of secretory activity of the inflamed pleura. This hyperthermia amounts sometimes to from two and a half to three degrees. Third—the elevation of parietal temperature decreases in the statical period of the effusion ; that is to say, when the level of the fluid remains stationary, or in other words, when secretion is not going on. The temperature, however, still exceeds that of the sound side by from half a degree to one and a half degrees. Fourth—pleurisy not only raises the parietal temperature of the side on which it is seated, but it raises also that of the opposite side. The parietal temperature, however, of the diseased side is always higher than that of the healthy. Fifth—the parietal temperature drops gradually when the effusion is spontaneously absorbed, still remaining higher than that of the healthy side. This excess of heat lasts for some time, and should not be neglected. It explains, indeed, the possibility of relapse, since it indicates the persistence of the anatomical conditions which preside over the formation of the effusion. Sixth—in pleurisies without effusion, the local excess of heat is less than when there is effusion. 'The return to the normal temperature also occurs more rapidly. Seventh—the absolute elevation of the local temperature on the diseased side is more considerable than the absolute elevation of the axillary temperature.

What, then, happens when thoracentesis is performed ? Immediately the parietal temperature rises on the punctured side. If the effusion is not reproduced the hyperthermia may still increase by some tenths of a degree ; but this excess only lasts for some hours. Then the parietal temperature decreases, returns to the figure which it had before the puncture, continues to decrease, and finally returns to the normal figure. If the effusion is reproduced, to be again reabsorbed, the local temperature rises after the puncture during some days, then progressively decreases under the influence of medical treatment. If, on the contrary, a fresh puncture is rendered necessary, there results a local, and then a general hyperthermia, the temperature remains stationary with the effusion reproduced, and at each new puncture the same series of phenomena is produced.

According to Dr. Pétér, the local hyperthermia consecutive to the puncture must be considered as a consequence of *hyperæmia a vacuo*. This quite mechanical hyperæmia is necessarily additional phlegmasic hyperæmia. There are thus two congestions of blood in lieu of one, whence occurs augmentation of tension in the vessels of the still inflamed pleura ; and whence also greater richness of the new fluids in leucocytes. Thus the possibility of a purulent transformation of the effusion is comprehensible in the cases where the puncture has been made in the highly febrile period of the pleurisy. The syncope, pulmonary congestion, albuminous expectoration, pain and oppression, which have been noted as the sequel of too sudden depletions of the pleura, are not less easily explicable.

In a further paper on the local temperatures and pulmonary phthisis (*Bull. de l'Académie de Médecine*, 2d series, vol. vii. No. 37), Dr. Pétér endeavours to demonstrate that so soon as tubercles occur at any point, the local temperature rises there. Thus, in cases of pulmonary tubercularization which are still dubious, when it is only by the aid of the most minute investigation that one perceives a slight difference of the tensility and the elasticity of the region, and a little dryness of the vesicular murmur, with respiratory emphasis, the thermometer already shows an elevation of temperature, which may extend from three-tenths of a degree to one degree. The average local temperature of the thoracic wall being in

a healthy subject about thirty-six degrees centigrade; this temperature reaches, in the cases referred to, 36.2, 36.3, 36.5, 36.8 degrees. Moreover, this hyperthermia is in general proportioned to the intensity of the local morbid signs. If, for example, the temperature of 36.2 degrees is found outside of the chest where there can scarcely be observed a slight modification of the sound and rhythm of the respiration, there will always be found several tenths more outside where the respiratory roughness is very evident, the emphasis more marked, and the dullness more pronounced. Thus the thermometric method would permit the establishment of a diagnosis in cases where the most experienced practitioners would, up to the present time, have hesitated. Who does not know, for example, how much the symptoms of chlorosis resemble those of tuberculosis at the outset? Now, in chlorosis the temperature of the upper intercostal spaces remains at about 36 degrees, and is in all cases equal on both sides for the same space; whilst in pulmonary tuberculization, the temperature there is always superior to the average by several tenths of a degree to one degree, and the hyperthermia is unequal on one side compared with the other, as are the lesions. Moreover, the investigation of the local temperature of the superior intercostal spaces may serve to fix the diagnosis, in cases in which it is necessary to determine whether a dyspepsia with wasting is idiopathic or symptomatic of commencing tuberculization. M. Pétér cites various interesting observations of cases in which the employment of this method has permitted him to arrive at the truth.

It is especially the disparity in the local hyperthermia of the summits of the chest which constitutes an affirmatory sign of the existence of a local lesion. This disparity is indeed necessarily associated with the actually differing anatomical and physiological conditions of usually similar parts of the organism, the temperature of which ought to be normally equal, and to rise or fall simultaneously, and in parallel lines, if the thermic modifications arise from a general cause. On the other hand, if the figures are dissimilar or too homologous in identical spaces, it is because the conditions which generate heat are changed there; and, under the circumstances, they can hardly be so, except by the tuberculization, which is almost always simultaneously developed at the same points of the summits of the lungs, without being habitually symmetrical there, either in the number, the depth, or the extent of the lesions.

Dr. Pétér has investigated the influence of hæmoptyses on the local temperature. He has found that it rises at the moment of the bleeding; that it remains high while the bleeding lasts, and then drops as it passes off. The variations of local temperature may even extend to the general temperature. In *caseous pneumonia* the hyperthermia is yet more considerable than in ordinary tuberculosis. It may amount to three or even four degrees.

Thus in all the phases of pulmonary tuberculization, there is a local elevation of the temperature which cannot be conceived without a concomitant and generating hyperæmia. In the first phases of the disease, this hyperæmia would be, according to the expression of Dr. Pétér, "trophica-tuberculous," or tuberculizing; necessary to the development of the tubercle, and circumscribed to the very points at which the tubercle is in course of germination. Later on, the hyperæmia would radiate from the tubercle formed at the intact points of the parenchyma, so as to engender there congestion, hemorrhage, or inflammation. The practical and therapeutical conclusion to be deduced from this view is that it is important to modify and to prevent trophic hyperæmia, whilst it is only localized, from radiating and from disordering the distant parenchyma. That is the part which is played by revulsive treatment—Lister's counter-irritating plasters, cupping points, cauterization, etc.

In these, as in his previous researches, Dr. Pétér employed only the ordinary

clinical thermometer in daily use in hospitals. Dr. Decaisne, who analyzes in the *Revue Médicale* the elaborate memoirs of Dr. Pétér, adds the personal researches of Dr. VIDAL, of Hyères, which fully confirm the results of M. Pétér. He finds (*Bulletin de l'Académie*, vol. vii. No. 38) that as soon as a nucleus of tubercles commences evolution, a corresponding augmentation of temperature may be observed on the local surface of the skin. This disappears with the inflammatory period, whether that has been cut short or has given place to the destructive period. Indeed, according to this author, the rise in temperature of the skin corresponds so well to the internal inflammation, that it is possible to exactly draw in the thermometer the outlines of a cavity when the pericavernous tubercles in their turn enter upon evolution. When the local temperature rises, the pulse is always quickened. This is especially seen in galloping consumption. According to M. Vidal, the rise in temperature seems to be caused, not so much by the bulk of blood which flows towards an organ, as by the difficulty which the blood finds in returning from the periphery to the centre of circulation. It would seem that whenever the arterial blood is obstructed in its circulation through the capillaries, heat is given out.—*London Med. Record*, Aug. 15, 1879.

Treatment of Yellow Fever.

Dr. F. PEYRE PORCHER, of Charleston, S. C., advocates (*Louisville Med. News*, August 30, 1879) the following treatment of yellow fever:—

1. Sponge the head, hands, and arms assiduously with ice-cold water at the very commencement of the attack, not losing an hour. This is to be repeated at intervals whenever the temperature rises, cold ice-water being quite capable of reducing the temperature. Towels soaked in ice-water are preferable to sponging. Fifteen to twenty minutes generally suffice for each application, its necessity being determined by the existence of pyrexia. Few perform this simple but essential procedure as they should do. Prof. T. O. Summers, of Nashville, was perfectly correct when he stated recently that "cold water is the remedy in yellow fever."

2. Give immediately and but once Blair's calomel gr. xx, quinine gr. xx, diminishing the dose for children. The quinine may not be essential, though I greatly favour its use for several reasons, and have never seen it produce a single ill effect.

3. Follow in three or four hours with a saline cathartic, which is cooling and antiphlogistic.

4. Apply mustard plasters to the entire abdomen, and place the feet in a hot mustard foot-bath from the beginning of the attack, and repeat them frequently. These may be followed by a blister to the abdomen (which certainly does no injury) in case there is nausea or irritability of the stomach.

5. After the salts have acted give an effervescing or antacid mixture of this nature (which was much used by the late Prof. E. Geddings, of this city): *R.* Acetate of potash, ʒj; bicarb. of potash, ʒj; morphia, gr. j; water, ʒvj. A teaspoonful to a dessertspoonful every two or three hours to quiet irritation and act as a mild antacid and diuretic.

No other treatment or active measures are required, save the continuance of the cold water and pellet of ice given internally, if desired. The administration of food must be watched with the greatest care throughout the disease.

Doubtless a few drops of tinct. of aconite might prove serviceable, added to the mixture above mentioned or given separately, if the pulse or temperature is with difficulty reduced.

Delirium Tremens.

The *Centralblatt f. d. Med. Wiss.*, No. 25, 1879, contains an interesting *resumé* of observations on delirium tremens made on a large scale in the hospitals of Dantzic and Königsberg, by Dr. P. NÄCKE, of Dresden. He finds that this affection is infinitely more common among brandy (*Schnaps*) than among wine and beer drinkers; hence its prevalence in Russia and America. The most dangerous spirit is that distilled from potatoes, probably because it contains more amylic alcohol in the form of fusel oil. Persons who habitually drink several kinds of spirits seem more liable to be attacked than those who restrict themselves to one sort only. In a very large number of cases the attack is determined by a severe fit of intoxication or an epileptic seizure. The influences of race, climate, social relations, etc., are difficult to state accurately. Women suffer less often than men: among the latter, those who are much exposed to weather, and have much outdoor work, or else those whose occupation brings them much in contact with spirits, are most often attacked. The period when delirium tremens is most frequent is from thirty to fifty, the largest number of cases occurring between thirty-five and forty. The youngest patient Dr. Näcke met with was eighteen years old. The most favourable season (for North Germany) is late autumn, and next to that the summer time.

Dr. Näcke finds that 5 per cent. of the cases (at any rate at Königsberg) are only abortive forms, *delirium tremens incipiens*, which may be regarded as the disease limited to its initial stage. This form is the rule with women. He also describes a *delirium tremens chronicum*, lasting weeks or months, and consisting of a series of abortive outbreaks, with more or less well-marked intervals, and succeeding a decided attack of the ordinary disease.

Delirium tremens has a premonitory stage of two to four days. Increased perspiration and thirst are often observed in the course of the attack. The gastric symptoms are very important in forming a prognosis.

In one-third of his cases Dr. Näcke observed slight feverishness, not exceeding 38.8° Cent. (101.8° Fahr.). A temperature higher than the latter points to internal inflammation, especially of pneumonic character. The ordinary fever only occurs in the evening.

Albuminuria occurred in 82 per cent. of the cases, kidney and heart diseases being excluded, and the amount of albumen ranged from minute traces up to enormous quantities. This albuminuria ordinarily disappeared with recovery from the delirium. In one-fourth of the cases it was accompanied with fever, and the two rose simultaneously, but the fever was not always proportioned to the intensity of the delirium.

Some chemical analyses seem to prove that the excretion of phosphorus is diminished at the commencement of the delirium, probably from impaired tissue-change in the great nervous centres. The hallucinations of delirium tremens are all perversions of external sensations, generally of those received through the eye and ear. They are all characterized by depression. Dr. Näcke only noticed illusions connected with animals in one-third of a very large number of cases, and they were not restricted to small animals, but referred also to large ones. In any case the animals are always supposed to be alive and active. All the symptoms usually get worse at night. They do not nearly always disappear completely after the first good sleep, but crop up in different forms for some time longer.

The mortality varies at different times even in the same locality. Dr. Näcke found that, of 860 cases at Königsberg, 24.2 per cent. died. The number of complications also varies very much. The first attack is always the most dangerous. In fatal cases, Näcke, like others before him, failed to find any charac-

teristic morbid changes. The best treatment seems to consist in narcotics given from the first in moderate doses. Three to five grammes of chloral in two doses generally were found to induce sufficient sleep, but the dose required to be pretty frequently repeated later on. Mechanical restraints should be avoided if possible, especially as they give rise to many illusions.—*Med. Times and Gazette*, Sept. 6, 1879.

How to Stop a Cold.

HORACE DOBELL, in his little work on "Coughs, Colds, and Consumption," gives the following plan for stopping a cold. If employed sufficiently early it is said to be almost infallible: 1. Give five grains of sesquicarb. of ammonia and five minims of liquor morphine in an ounce of almond emulsion every three hours. 2. At night give iss of liq. ammon. acetatis in a tumbler of cold water, after the patient has got into bed and been covered with several extra blankets. Cold water should be drunk freely during the night should the patient be thirsty. 3. In the morning the extra blankets should be removed, so as to allow the skin to cool down before getting up. 4. Let him get up as usual and take his usual diet, but continue the ammonia and morphia mixture every four hours. 5. At bed time the second night give a compound colocynth pill. No more than twelve doses of the mixture from the first to the last need be taken as a rule; but should the catarrh seem disposed to come back after leaving off the medicine for a day, another six doses may be taken and another pill. During the treatment the patient should live a little better than usual, and on leaving it off should take an extra glass of wine for a day or two.—*London Medical Record*, Aug. 15, 1879.

On Erysipelatous Pneumonia.

At a recent meeting of the Société des Hôpitals in Paris, M. STRAUSS reported (*Bull. Gén. de Therap.*, July 15, 1879) a case of erysipelas of the lungs and bronchi. The patient, a healthy strong-built man, aged 26, had entered the hospital on March 14, 1879, with facial erysipelas. Previous history good. On the 20th the erysipelas of the face was nearly gone, when suddenly the pharynx, tonsils, and tongue were observed to be very red (pharyngeal and buccal erysipelas). On the 23d the fever and general symptoms had become much more intense. The patient complained of a slight pain in his right side; no rigors. He coughed a little; no laryngeal phenomena. Pneumonia of the base of the right lung was diagnosed. In less than four days the pneumonia had spread over the whole of the right lung, and, on the 28th, the patient died. The *post-mortem* examination revealed some very important lesions of the respiratory apparatus; the mucous membrane of the larynx and the ary-epiglottic folds were of a normal colouring, which contrasted strongly with the purplish tint of the pharynx and the palate. The mucous membrane on the three upper rings of the trachea was also of a normal colour, but, beyond this, the whole of the trachea was of a deep scarlet hue, which extended over the whole of the large right bronchus and its branches. The left bronchus was again normal. The greater part of the right lung, viz., the entire middle lobe, two-thirds of the upper lobe, and the upper three-quarters of the lower lobe, had been transformed into a hepatized mass, the upper part of which was of a pinkish hue, the rest gray. On making a transverse section, a grayish sero-purulent fluid oozed out. On microscopic examination, the fluid which was obtained by scraping the sections of the lung contained nothing but leucocytes; no fibrinous casts of the alveoli. Some portions of the lungs were carefully hardened, but, on making new sections, the alveoli were found to be filled with white blood-corpuscles without a trace of

fibrine. In discussing the histological changes in the tissue of the lungs which he had just described, M. Strauss said that it was evident that they were very similar to those histological changes which Vulpian, Steudner, and Volkmann had described as the characteristic symptoms of cutaneous erysipelas. He thence concluded that the pneumonia which he had just observed exhibited certain clinical and histological peculiarities which distinguished it from other similar affections. The clinical characteristics were: the occurrence of pneumonia in an individual who was suffering from erysipelas of the face and throat, and had not caught cold; the peculiar way in which the affection began (no rigors, and only a slight pain in the side); the rapid progress of the affection. *Histological Characteristics*.—General gray hepatization, the leucocytes in the alveoli, no trace of fibrinous casts, analogy between the lesions which were observed in the present case and those which occur in cutaneous erysipelas. M. Strauss, therefore, thinks himself justified in asserting the existence of a peculiar form of pneumonia, to which he gives the name of erysipelatous pneumonia, and which was designated by the ancients erysipelas of the lungs.—*London Medical Record*, August 15, 1879.

Pulmonary Tubercle.

Professor PÉTER thus concludes a long series of papers (*Bull. Générale de Therap.*) on pulmonary tuberculosis:—

1. The *chronic* is much the most common form of the affection.
2. Of the chronic forms the most common, fortunately, is the *apyretic*.
3. Some chronic cases are at times distinctly *febrile*, with more or less prolonged periods of remission.
4. In another variety of tubercular disease of the lung the fever is *continuous*, presenting no period of remission.
5. The pyretic form of the affection may be *primary* or may *succeed* the apyretic variety; in the latter case the disease is decidedly less dangerous than when it is febrile from the outset.
6. Galloping phthisis and acute phthisis are perfectly uncontrollable by any of the therapeutical measures at our command.
7. Of the four chief varieties mentioned, the first two are more common in private practice than in hospital. In these, which are to some extent amenable to treatment, the double aim which must always be kept before the mind is to *attend carefully to the digestive organs* and to *combat the febrile symptoms*.
8. Tubercle, indeed, and this is no paradox, shows a natural tendency to cure—(1) by softening and expulsion, a process which does some damage to the lung by producing excavation, but which may safely end in cicatrization; (2) by fibroid degeneration of the affected part; (3) by calcification.
9. It is stated above that tubercle may be cured; it would be nearer the truth to say that its evolution is arrested, that it ceases to exist, that it *dies*.
10. The grand problem, therefore, in the treatment of the tuberculous, is to *enable the patient to outlive his tubercles*, a problem which, in a great many cases, is certainly not insoluble.—*Glasgow Medical Journal*, September, 1879.

Treatment of Cough in Tuberculosis.

PÉTER (*Bull. de Therap.*, April 15, 1879) is a strong advocate of the combination of opium and belladonna in treating the cough of tuberculous patients. He begins by giving 1 to 2 pills, containing each 1 centigramme of extract of thebaicum and 5 milligrammes of extract of belladonna. A mixture of equal parts of syrup of tolu and syrup of turpentine diminishes the secretion and

soothes the cough. M. Pétér thinks that the vomiting which often follows a fit of coughing is caused by a morbid hyperæsthesia of the stomach. The food which reaches the stomach irritates the gastric branches of the vagus nerve, and thereby causes both coughing and vomiting. In order to prevent this, he gives immediately before the meal some soothing drug, such as a drop of laudanum in a teaspoonful of water; or a solution of morphia (1 milligramme in a teaspoonful of water). The dyspepsia of tuberculous patients, which manifests itself by a feeling of heaviness in the stomach, is treated with hydrochloric acid (3 drops at the end of each meal in three spoonfuls of water). In cases of gastralgia, a small blister will be found useful. If it has no effect, hypodermic injection of morphia must be given.—*London Medical Record*, August 15, 1879.

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Hypodermic Injections of Morphia in Dyspnœa caused by Albuminuria.

Dr. ORTILLE has obtained (*Lyon Méd.* No. 27, 1879) good results in cases of albuminuric dyspnœa, which were not complicated with pulmonary œdema or heart disease, by injecting hypodermically five milligrammes of morphia. In cases where the albuminuria has caused œdematous swellings, he recommends from two to three grammes per dose of infusion of jaborandi by the mouth, or to inject hypodermically two centigrammes of the chlorhydrate or nitrate of pilocarpine. If the patient is very weak and death seems imminent, a dose of from one to two milligrammes of phosphate of zinc is given to stimulate the nervous system.—*London Med. Record*, Aug. 15, 1879.

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Treatment of Cardiac Dyspnœa.

Professor SÉE says (*Concours Méd.*, July 12, 1879) that in all cases of continuous cardiac dyspnœa he has found iodide of potassium answer very well, especially where the dyspnœic symptoms were combined with a lesion of the tissue of the heart. It is equally useful in valvular lesions. Even if the diagnostic error of mistaking a simple cardiac dyspnœa for true asthma should be committed, the use of iodide of potassium would not be followed by any evil results, as it is an exceedingly useful drug in asthma. The direct effect of iodine in such cases is the promotion or rather liquefaction of the bronchial secretion. This greatly facilitates respiration. The dose given by M. Sée is 1.25 grammes per day; this is gradually increased to from 2 to 3 grammes, and is made as follows: *R.* Iodide of potassium, 10 grammes; *Syr. cort. aurant*, 200 grammes; 2 to 4 tablespoonfuls per day. Each spoonful must be dissolved in a tumbler of water. Patients suffering from heart disease take iodide of potassium very well—better than other patients. The following are the drawbacks of this drug: 1. Bleeding from the buccal mucous membrane, or bronchitis and hæmoptysis in tuberculous patients. (Phthisis is therefore a counter-indication for the use of iodide of potassium.) 2. Loss of flesh: in fat individuals this is to be regarded as a favourable symptom. 3. Loss of strength: in such cases the treatment must be suspended at once. 4. Loss of appetite. Opium may be added to iodine, in order to prevent the evil effects of iodine. *R.* Iodide of potass., 10 grammes; *Syr. cort. aurant*, 200 grammes; *Extr. thebaic*, 0.10 to 0.15 gramme. From 2 to 4 spoonfuls per day. For the *extr. theb.* the *syr. papaveris* may be substituted (50 grammes). Opium is given here with a view of making the iodine more easily tolerated, and of diminishing the cough, which greatly inconveniences the patient. Another very useful combination is that of digitalis with iodine, as the one has a soothing influence on the dyspnœa by acting on the lungs, and the other increases the action of the heart and modifies the arterial tension. The following formula will be found to answer well: *R.* Julep gommeux 100 grammes; *Iod. of potass.*, 2 grammes; *Tinct.*

digit., g. 40; or the following formula: Extr. gent., 0.10 gramme; Pulv. fol. dig., 0.15 gramme. To take one pill three times daily, together with the sol. of iodine, which we have mentioned above. In cases where patients cannot take digitalis, chloral will be found to be a good substitute. Thus, *e. g.*, Julep gommeux, 120 grammes; iod. of potass., 2 grammes; chloral-hydrate, 4 grammes. To be taken every two hours during the day.—*London Med. Record*, Aug. 15, 1859.

Intra-Vascular Tumour and its Import.

The manner in which general tuberculosis is disseminated from a local caseous focus has not yet been so thoroughly worked out as has been the development of secondary cancer; for, although few would be found now to deny that acute miliary tuberculosis is the result of infection of the organism from a local starting-point, yet we have hardly got beyond the general assertion that this infection takes place through the bloodvessels and the lymphatics. Facts, indeed, point to both these paths of transmission; and, as regards the lymphatic system (with which tubercle seems to have special affinities), anatomical research has fairly well established the doctrine of its special infection. We have examples of this in the local infection of serous membranes—*e. g.*, the perineum—from contiguous tubercular or caseating foci; and as the lymphatic glands are *par excellence* the seat of caseous (or "tubercular") inflammation, the existence of lymphatic tubercle, perivascular tubercle, etc., is readily explained. But observations upon the actual infection of the lining membrane of bloodvessels, similar to the infection of other endothelia, still afford scope for investigation. It is for the demonstration of this point that Dr. Muegge, pathological assistant of Gottingen, contributes a paper in a recent number of Virchow's *Archiv*, his observations being limited to the pulmonary bloodvessels in ten cases of disseminated tubercle of the lungs. He points out that Rokitansky's dictum that the lining membrane of bloodvessels enjoys complete immunity from tuberculosis is incorrect, and he refers to facts recorded by Weigert and Klebs in support of this, to which his own observations lend further confirmation. Weigert met with miliary tubercle in the pulmonary vessels in a case of hæmoptysis, and also describes two cases of acute tuberculosis in which giant-celled tubercle was found in the larger pulmonary veins. Klebs found tubercles in the pulmonary vessels in experiments on rabbits, and also records the occurrence of miliary nodules in the interior of the larger pulmonary vessels in a case of human miliary tuberculosis. The inquiry undertaken by Muegge at the suggestion of Professor Orth was simple enough. By merely laying open the bloodvessels in tubercular lungs he found in all the cases he examined some granulations growing from the lining membrane. The number of these intravascular nodules was in proportion to the number of granulations scattered in the interlobular and interalveolar tissue of the lungs. They occurred far most extensively in the veins, and in the smaller tributaries more than in the larger trunks, their chief seat being at the point of entrance of one vein into another. Of spheroidal shape and well-defined margin, they project into the lumen of the vessel, sometimes being barely visible, sometimes as large as pins' heads; the smaller granulations being grayish and translucent, the larger yellowish throughout or yellowish in the centre and gray at the margins. Often in close proximity to tubercle in the surrounding tissues, they occurred also in parts removed from such.

It is important not to confound these granulations with localized inflammatory thickenings of the lining membrane, or with organized thrombi in the vessels. The microscope may be necessary to distinguish between these forms of intravascular change. Simple inflammatory formations are differentiated by the fact

that they do not rise abruptly from the surface of the intima, that they are more flattened than the tubercles, that they occur in ridges, and in structure are composed of wavy interlacing bundles of delicate fibrous and spindle-celled tissue between the endothelium and the undulating fenestrated membrane. Small thrombi, composed mainly of leucocytes and fibrin, are less easy to distinguish, but even here the presence of the endothelium between the thrombus and the vessel wall would suffice to distinguish them. Sometimes such a thrombus may overlie a tubercular granulation.

Microscopical preparations exhibit the granulation as a spheroidal body springing from the lining membrane of the vessel, and composed of closely-packed cells as large as or larger than white blood-corpuscles. The cells contain one or more nuclei within granular protoplasm, and a fine reticulum binds the cells together. Only rarely are giant-cells to be found; and the larger granulations are either entirely caseous or else caseous in the centre with a periphery of cells. The elements of inflammatory thickenings are not only round, but spindle-shaped, and do not form the whole mass of the nodule; whilst the leucocytes embedded in a thrombus are less plainly differentiated. The relations of the thrombus to the endothelium, however, help to distinguish it from a tubercular granulation. The tubercle is a growth of the intima; the characteristic wavy line of the fenestrated membrane bounds it beneath; and frequently the subjacent muscularis and adventitia show no change whatever. Sometimes, however, both the outer and middle coats of the vessel are the seats of tubercular growth, in which case there are generally pneumonic and tuberculous foci in the lung-tissue adjacent. So that sometimes—just as granulations spring up on the serous surface of the intestine corresponding to tubercular ulceration—the adventitia and muscularis are the seat of tubercle infected by the growth in the intima. The author admits here that the question as to which was primary—the growth in the outer or that in the inner wall of the bloodvessel—cannot always be determined. The relation of the endothelium to the tubercular granulation is not readily made out, owing to the great delicacy of the former. Here and there Muegge succeeded in preserving the endothelial layer passing over the tubercle. In one fortunate specimen a thrombus surmounted the granulation, and the line of the endothelium divided the clot from the tubercle. In most specimens the endothelium could be seen mounting up the sides of the granulation, but it was rarely preserved over its summit; and sometimes not only the endothelium, but a portion of the second layer of the intima lay over the tubercle. It would seem, then, that the latter was developed, not from endothelium (as in other serous membranes), but in the subendothelial tissue, from growth of connective-tissue cells, aided possibly by migrant leucocytes from the vasa vasorum, or from the blood circulating in the vessel itself. Each of these sources is open to objection—the former that tubercle of the intima occurs often unassociated with tubercle of the adventitia or muscularis; the latter that the tubercle grows in arteries, which, according to Cohnheim, are never the seat of cell-migration, even in the most intense inflammation. On the whole, then, it is simpler to conclude that the tubercle is developed from proliferation of connective-tissue cells alone.

The import of this research, if well grounded, is simply this: It proves that in tuberculous subjects the blood may be, and is, infected with the poison. It proves that just as in the case of lymphatics leading from the seats of tuberculous change, and becoming themselves the seat of fresh tubercular growth, so here the blood-vessels themselves may bear witness to their contaminated contents. There is no strained analogy between this and the ulceration of the air passages in a phthisical lung by the passage of tuberculous material over them. Both may be regarded as examples of local infection of tubercle. The rapidity with which the blood-

current flows in the arteries renders these vessels far less prone to such infection than the capillaries and the veins. The capillaries may be the chief seats of the development of granulations disseminated throughout the lung, and much of the poison may be arrested there, but not all; for the occurrence of the granulations in the veins testifies to its passage onwards; and it is interesting to note the comparatively larger number of granulations in the veins than in the arteries, a difference probably due to the difference in the rate of the blood-stream. The main meaning of it all is that it is as strictly correct to speak of the blood as it is to speak of the lymphatic system being the medium for the dissemination of tubercle.—*Lancet*, Aug. 23, 1879.

Simple Dilatation of the Stomach and its Treatment.

In a paper read before the British Medical Association (*British Med. Journal*, Aug. 23, 1879) Dr. T. CLIFFORD ALLBUTT and Mr. E. H. JACOB urged that simple dilatation of the stomach apart from pyloric obstruction is not rare, and yet is not generally recognized by the profession in England. Dr. Allbutt's attention was drawn first to the subject by Kussmaul, in a paper published in 1869, and since that time he had had frequent opportunities of verifying the truth of Kussmaul's statements. Niemeyer, Leube, and others had published similar statements at subsequent dates. Among its chief causes, he referred to gluttonous eating, or the use of much slop or of aerated drinks acting upon the healthy stomach, and to the effects of ordinary ingesta upon the stomach weakened by anæmia or such debilitating diseases as phthisis, acute rheumatism, and the like. Deficiency of peptic secretion in the stomach, if neglected, may lead to the same result. Cases of ulcer or catarrh of the stomach, do not readily lead to dilatation, owing to the intolerance of accumulating contents and to the early and frequent vomiting thus induced. The symptoms and physical signs of dilatation of the stomach were detailed somewhat fully. The absence of pyloric obstruction in many cases must be taken upon an inference drawn from all the circumstances, an inference not always a certain one. Prognosis depends greatly upon such an inference, but treatment is not much affected by it. Treatment by regimen and certain drugs was touched upon, but the author said that, as in dilatation of the bladder, the direct method was to be found in systematic catheterism. This method he had found difficult in private practice, but more easy in the hospital, and in this part of his subject he was greatly indebted to Dr. Jacob's aid. Dr. Jacob had treated several cases for him and his colleagues by means of the stomach-siphon, and these cases were reported and commented upon by Dr. Jacob. The instrument used, and the mode of its application, were described.

Measurement of the Temperature of the Stomach.

Dr. WINTERNITZ, of Vienna, describes, in the *Centralblatt f. d. Med. Wiss.* (No. 24, 1879), a simple method for ascertaining the temperature of the human stomach. He uses thermometers six centimetres (2.4 inches) long, slightly bent in their lower third so as to pass more readily over the base of the tongue and the entrance to the larynx. The scale reaches from 35° to 42° Cent., and each degree is divided into tenths. The thermometer has a small glass ring blown on its upper end, and through this a strong thread is passed, carried up through the sound used for its introduction into the stomach, and secured. The instrument is also further fixed by its upper end being cemented into the hollow of the sound with a solution of gutta-percha. Preliminary experiments showed that no error could arise from the temperature of the parts which the thermometer had to pass through before reaching the stomach, as this passage lasts, at the outside, ten

seconds, and the mercury does not begin to rise for about fifteen or twenty seconds. The maximum temperature is reached in four or five minutes. If the act of introduction is delayed by the irritability of the larynx or œsophagus, it is only necessary to cool the thermometer in ice, and thus the mercury will be prevented rising for nearly two minutes. Dr. Winternitz has made use of this method to examine the effect of cold irrigation of the rectum on the temperature of the stomach. Thus injected, 1000 cubic centimetres of water at 11° Cent. reduced it 0.9 Cent., or nearly one degree, in thirty minutes. The most interesting fact, however, brought out by the experiment is that the temperature of the stomach was reduced more than that of the axilla, the former having fallen from 37.15° to 36.25° Cent., and the latter from 37.05° to 36.70° during the irrigation. Dr. Winternitz claims this fact of the greater cooling of the internal organs than of the skin by cold applied to the rectum as a new discovery. He suggests its importance in controlling hyperæmia and inflammation of the stomach, liver, and other abdominal organs.—*Med. Times and Gaz.*, Aug. 28, 1879.

Bowel Obstruction.

EPSTEIN reports (*Centralb. f. d. Med. Wiss.*, April 26) a case of stenosis of the bowel from twisting of the mesentery in a child eight days old. On the fourth day after birth, the child was restless; on the fifth it vomited immediately after each time it sucked, and had thin fluid mucus-containing, but not bloody, stools. The epigastric region was on admission markedly blown out; the lower curvature of the stomach clearly made out through the abdominal walls, below which the belly was sunken and boat-shaped, and the coils of intestine were to be felt loosely rolled up like a ball. The superficial abdominal veins were very full. The vomited matters contained no blood, but bilirubin, and were tenacious and stringy. The motions were frequent, but not copious, and were very pale. On the second day after admission the child died. The whole mesentery of the small intestine was twisted spirally half a turn from right to left upon itself; the duodenum was much dilated in its first two portions; the inferior horizontal portion twisted upon its own axis by the twisting of the mesentery, so that at the part where the perpendicular portion passes into the horizontal, there was complete closure. The cæcum and colon were not in their normal places. There were no signs of old inflammation, so that any twisting of the intestinal axis in the fetal condition is not to be thought of. The reporter of the case inclines to the view that the torsion took place during the act of birth, which was very sudden; the child nearly falling on the floor.—*Lond. Med. Record*, Aug. 15, 1879.

An Inquiry into Certain Points Connected with Albuminuria.

Recent observations on the frequency with which albuminuria is found in the urine of persons who otherwise present no symptoms of renal disease, and who are free from those general or local conditions with which its presence has been long recognized, make it necessary to reconsider the diagnostic value of this appearance as an indication of kidney-disease. The first question which naturally arises in connection with these observations is, whether there is not some fallacy—whether the substance is always the same identical serum-albumen. Dr. ROBERT SAUNDBY has endeavoured to answer this question in a paper already published in the *Birmingham Medical Review* (July, 1879), in which he tried to show that, *a priori*, it was possible that paraglobulin might be present and give similar reactions to albumen, as paraglobulin diffuses very readily, is soluble in a solution of sodium-chloride such as urine, and coagulates at about 70° Cent. (158° Fahr.). In order to settle this point, he proceeded to precipitate the paraglobulin in all

cases of albuminous urine, and then repeated the test for albumen. At first, he used sodium chloride and carbon-dioxide as precipitants; but afterwards, on the advice of Professor Hoppe-Seyler, he used magnesium sulphate. The result of forty-two observations was that, in one case of dyspepsia, the entire albuminous body was on one occasion removed by magnesium sulphate; but a subsequent experiment with the urine of the same case did not have a similar result. In one other case, of phthisis, magnesium sulphate altogether or almost removed the albuminous substance. The second subject discussed was, whether this albuminuria may be accounted for by differences in the diffusibility of certain kinds of albumen. The urine of twenty-one cases of albuminuria occurring under different clinical conditions was submitted to diffusion through vegetable parchment for forty-eight hours in each case. The result showed only slight differences, such as were accounted for by the varying acidity of the urines. The author next pointed out that the albuminuria of young persons is not always completely removed by rest in bed and milk diet. The last part of the paper related to the doctrine of food-albuminuria. The author contended that the quality of the food does not produce a constant and uniform effect on the quantity of albumen excreted, as it would if Parkes and Pavy were right in thinking the increase after food to be due to the passage into the urine of a highly diffusible modification of the albumen of the food. Moreover, the albumen excreted after food does not diffuse more readily than that excreted before food, any occasional differences being explained by the increased acidity of the urine after food.—*British Med. Journal*, Aug. 23, 1879.

Cardiac Hypertrophy and Renal Disease.

Professor BUHL, of Munich, whose name is familiar to us from his researches on tuberculosis, has published a paper on the connection between renal disease (granular kidney) and cardiac hypertrophy, which, judging from the abstract of it in *Centralblatt f. d. Med. Wiss.*, 1878, page 668, is likely to set the pathological world a-thinking. The original paper is entitled, "Mittheilungen aus dem pathologischen Institut zu München, 1878."

Von Buhl rejects both the theories of Traube, and of Gull and Sutton, as to the causation of the hypertrophy of the heart in Bright's disease, and, though it is not so stated, it is clear that, in part at least, Dr. G. Johnson's view, as well as Ewald's, lately referred to in this journal would also be set aside.

The following points are urged against Traube's theory—(1) The occurrence of eccentric hypertrophy of the left, or of both ventricles without the presence of granular kidney; (2) the occurrence of well-marked granular atrophy of the kidneys without hypertrophy or dilatation of the left ventricle; (3) the occasional existence of left ventricular hypertrophy without dilatation; (4) the complete absence of signs of a dilated arterial system, which would be the necessary consequence of increased arterial tension; (5) the absence of cardiac hypertrophy in other forms of renal atrophy. Von Buhl further points out (6) that Traube's theory does not explain the hypertrophy of the right ventricle, which coexists with that of the left in 70.8 per cent. of the cases; and that (7) the hypertrophy of the left ventricle is often present *before* the kidneys are atrophied.

Gull and Sutton's view, that the hypertrophy is due to a general fibrosis of the arterio-capillary system, is met by some of the objections raised above, and also by the facts that at the commencement of the renal affection the fibroid change in the arteries and capillaries is not present, and that it is rare for any other organ except the kidneys to be decidedly shrunken, whereas in a general fibrosis we should expect all highly vascular organs to suffer.

One general objection to all theories of increased arterial tension as a cause of

the cardiac hypertrophy, and especially to Traube's theory, is the development of a *collateral circulation* in the kidney itself, by which the place of the constricted vessels is taken by others. According to Von Buhl, on the one hand, the vessels of the fat capsule, and the fibrous coat of the kidney, and the capillary network of the cortex, dilate; and on the other, the blood is diverted into the vasa recta, which run in parallel bundles from the boundary line between the cortical and tubular substance into the latter. The lateral pressure in these vessels is much raised, and their diameter becomes doubled or trebled. The resistance of the vasa efferentia becomes of no importance, the blood enters the veins more freely, and the increase of pressure in the dilated vessels is relieved by increased excretion of water. The real connection between renal atrophy and cardiac hypertrophy, according to Von Buhl, is as follows, and it will be at once evident how much his hypothesis differs from the ordinary explanations of these phenomena. He asserts (1) that kidney and heart are simultaneously affected, but that the hypertrophy of the heart is due to myocarditis, the result of inflammation of the pericardium, the valves, and the heart-muscle itself, some form of which is present in 65.7 per cent. of the cases he has examined. The time when this inflammatory process occurs is the commencement of the renal affection. Now, the myocarditis may either leave the heart atrophied at once, or more commonly be followed by dilatation, owing to the diminished resisting power of the diseased muscle to the blood-pressure, and afterwards by atrophy.

As a fact not previously noticed, Von Buhl describes a *relative contraction of the aorta* in these cases, which intensifies the hypertrophy of the left ventricle. Hence he explains the increased arterial pressure and cardiac hypertrophy, not by granular atrophy of the kidneys nor by a general arterio-capillary fibrosis, but by the hypertrophy of the left ventricle and the relative constriction of the aorta.

The other changes in the arterial system are sequelæ of the heart disease. The arterial fibrosis of the kidneys is also secondary. Lastly, it is possible that excessive muscular exertion, and especially that of the cardiac muscles, may lead to myocarditis, eccentric hypertrophy of the heart, and other pathological changes met with in Bright's disease. Thus, these conditions may be a not infrequent cause of this form of disease.

This short sketch of Von Buhl's new views necessarily excludes the data on which they rely for support, but his eminence as a pathologist must at any rate enforce their consideration, even though they deal roughly with current ideas.—*Med. Times and Gaz.*, June 14, 1879.

Increase of Albuminoid Matter in the Saliva of Albuminuric Patients.

M. VULPIAN has noticed that the saliva of individuals suffering from Bright's disease of the kidneys, and who were treated with injections of chlorhydrate of pilocarpine, contained a greater quantity of substances which were precipitated by nitric acid and heat than the saliva of healthy people. He subsequently asked M. STRAUSS to investigate the matter in his hospital. M. Strauss arrived at the same results. M. Vulpian's patient was suffering from a compound renal disease, the symptoms exhibited being partly of parenchymatous, and partly of interstitial, nephritis. He had been suffering from it for some time. One of M. Strauss's patients was a man aged 40, who had entered the Hôpital Tenon for a parenchymatous nephritis, of about six months' standing. His urine contained a considerable amount of albumen. Two subcutaneous injections of chlorhydrate of pilocarpine and one of nitrate of pilocarpine were given to the patient at intervals of several days between each injection. Each time M. Strauss noticed that by heating the saliva which had been secreted under the influence of pilocarpine,

and adding to it a few drops of nitric acid, it became turbid. The mucus contained in the saliva had been first removed by treating it with acetic acid, and then filtering it. It was found that 1000 grammes of the saliva contained 0.253 gramme of mucine, and 0.182 gramme of albuminous matter, which is precipitated by heat and nitric acid. Another patient on whom the same experiment was tried, and who had also albuminuria, was a man 41 years of age, suffering from insufficiency of the mitral valve. Two subcutaneous injections of pilocarpine, of 2 centigrammes of nitrate of pilocarpine each, were made at an interval of nine days. The saliva presented the same changes as recorded above, and was found to contain 0.45 gramme of mucine and 0.145 gramme of albumen in 1000 grammes of filtered saliva. The saliva of a patient who was not affected with albuminuria was then tested in the same way, and contained 0.330 gramme of mucine and 0.50 gramme of albumen in 1000 grammes of filtered saliva. It results from these experiments that, in patients affected with albuminuria, the saliva is liable to contain a greater amount of albuminoid matter than in the normal state. This interesting fact may perhaps be explained by assuming that the salivary glands are infiltrated by the serous elements of the œdema. If this should not prove to be true, the cause might perhaps be found in an alteration of the epithelium of the salivary glands, or in a modification of the albuminoid constituents of the blood or of the infiltrated fluids.—*London Medical Record*, Aug. 15, 1879, from *Bull. Gén. de Thérap.*, July 15, 1879.

Syphilitic Albuminuria.

In a paper on this subject read at the recent meeting of the British Medical Association (*British Med. Journal*, Aug. 23, 1879) Dr. DRYSDALE alleged that after the brain and the liver, he was inclined to believe that the kidneys were perhaps most frequently of all the internal organs affected with syphilitic inflammation or neoplasms. M. Rayer and M. Ricord had, in 1840 and 1851, given distinct evidence that syphilis attacks the kidneys; and, although it was somewhat rare to find this admitted by professed writers on albuminuria, he (Dr. Drysdale) was convinced, from personal observation, that a large number of cases of that disease among adults were due to this often unsuspected cause. No matter what treatment had been made use of, he had found that, in certain cases of syphilis, a fatal termination occurred by the insidious commencement of nephritis, usually far on in the disease, but occasionally arising precociously, or within a year after infection. The latter was, however, very rare indeed. The morbid anatomy of syphilitic albuminuria may consist of diffuse inflammation of the cellular elements of the kidney, which, as in the case of syphilitic cirrhosis of the liver, spinal cord, etc., leads to the destruction of the secreting cells, and ultimately to fatty degeneration of the organ. In some cases, circumscribed gummy inflammation forms small tumours in the substance of the kidney. The disease usually commences silently, is accompanied by anasarca, and may end in death from asthenia or in coma. The diagnosis is made out by the history of the case, and is often quite clear; but even when the history is indistinct, assistance may be gained by noticing whether there are any scars on the liver after death. Dr. Drysdale gave the clinical history of an acute case of syphilitic nephritis occurring in a young man, aged 28, with large rupial sores recently cicatrized, and with a short history of infection ten months before. He rapidly sank and died. He referred to several other cases which he had to treat in adults, some more chronic in character, and others acute, mostly occurring in the tertiary epoch and associated with gummy tumours of the soft parts or with bone-disease. His experience was that the iodide of potassium sometimes, though rarely, was useful in such cases; and that the prognosis was usually very bad.

Pigmentation of the Face in Abdominal Tuberculosis and other Chronic Abdominal Affections.

Dr. N. GUENEAU DE MUSSY (*Revue Médicale*, Feb. 1879) says that, twenty years ago, in a work on the cause and treatment of phthisis, he pointed out the coexistence of pigmentary patches on the face with abdominal tubercle. Since then, the two conditions have been so constantly associated, that he now regards the one as the sign of the other. Tubercular disease of the abdominal viscera is usually indicated by functional troubles which deprive the pigmentation of any diagnostic importance, but not always; and this pigmentation may become of value. It forms bronzed patches, which usually commence in the temporal fossa, and then spread over the forehead, where they may cover the greater part, or lose themselves in a diffused coloration, like that of mulattoes. Sometimes they invade other parts—the nose or the malar region; and they may even appear on other parts of the body, particularly the backs of the hands, and are sometimes so extensive as to constitute a species of Addison's disease. Pigmentation is found in other abdominal affections besides tuberculosis. Dr. Gueneau de Mussy has met with it in four cases of cirrhosis with ascites, and in a case of cancer of the stomach; it is present also in the well-known pigmentation of pregnant women, and may last several months after confinement should anything interfere with restoration to health. It is to be distinguished, however, though often coupled with it, from the greenish-yellow tint not uncommon in abdominal phthisis, and which appears to be associated with fatty degeneration of the liver; and if by its objective character this pigmentation put on the aspect of the melanoderma described by Addison—if in some cases, by its extent, it take this disease as its model, and appears in, indeed, an early stage—it may well be asked if it have not some pathogenic connections with Addison's disease, if it do not own the same cause, acting with less energy. Dr. Gueneau de Mussy then passes in quick review the causes of Addison's disease, and concludes that all excess of pigment is developed under the same pathogenic condition; and this is a lesion or irritation of the nervous threads which form part of the suprarenal capsules, and form plexuses in their vicinity. All irritation or lesion of these nerves, in whatever part of the abdomen they commence, will end in the same result. Clinical observation is in accord with this induction. It has been seen that the most different affections situated in all parts of the abdomen are associated with the melanoderma of Addison's disease, or with the partial pigmentation now more particularly in question. And an irritation which is physiological and not habitual, such as that which results from enlargement and congestion of the uterus in gestation, produces the same effect, and explains the formation of the pigmentary mass which is characteristic of the pregnant state.—*British Med. Journal*, June 7, 1879.

Spontaneous Production of Urticaria.

Dr. DUJARDIN-BEAUMETZ (*Gaz. Hebdomadaire*, July 25) exhibited at the Société Médicale des Hôpitaux an hysterical woman, who presented a peculiarity of which he knew of no other example. When a word is traced on any part of the body, in a few minutes an elevation of the skin is produced absolutely resembling urticaria, the inscription remaining thus marked for four or five hours, the temperature of the skin being also raised at these points. Neither urticaria nor any other eruption exists on any other part of the body. Prof. Vulpian has also met with a case, in a non-hysterical youth, in which elevations of the skin, like those observed on this patient, could be induced in the same manner; and in another patient Dr. Dujardin-Beaumetz was able to produce erythema at any point to

which he applied a magnet. Dr. Besnier observed that in persons liable to urticaria this eruption can often be induced whenever the skin is scratched.—*Med. Times and Gaz.*, Aug. 23, 1879.

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The Use of Arsenic in Skin Diseases.

At the recent meeting of the British Medical Association, Dr. ROBERT FARQUHARSON read a paper on this subject, in which he said: About thirty years ago, the British Medical Association issued a series of queries to its members, with reference to the use of arsenic in skin disease; and, considering the somewhat haphazard way in which the drug was then used, it was no doubt necessary to reassure the public mind, as was effectually done by the replies, that its use was at all events attended with danger. We know now much more precisely in what cases to prescribe the remedy with good effect; and the question naturally arises: How do we explain the undoubted fact that, while arsenic frequently relieves and even cures certain forms of cutaneous disorders, at other times it appears to be inert or even to do harm? It has been supposed by some authorities that, following up the analogy of the vesicular and pustular eruptions, which form an occasional, though rare, part of its physiological action, it simply acts as a cutaneous irritant, by stimulating sluggish processes of repair; or, again, we may hold that it effects some alteration in the blood, through a general influence on cell-growth; or, thirdly, and most suggestively, we may seek for our clue in the regions of nervous pathology. We know that eczema and psoriasis and lichen, etc., often show their neurotic origin in heredity and symmetry, and itching and tingling; they not uncommonly appear in connection with mental shock and depression; and may alternate with, or accompany, such undoubtedly nervous disorders as chorea. Arsenic is generally held to be a nerve tonic, and, speaking generally, we find it to be an useful and reliable remedy in all the skin affections of the dartrous class (Clifford Allbutt). In pemphigus, it acts almost as a true specific (Hutchinson). It is most valuable in lichen ruber, and has been recommended as an antidote to bromide acne; although the question might arise, whether the arsenic in any way lessens the restraining influence of the bromide over the epileptic fits. Over impetigo, strumous and syphilitic diseases, it has no influence; and it would be interesting to note its effect on herpes zoster, which has been reported as occasionally following its administration. Concerning the mode of administration, the author preferred to begin with a full dose of ten minims to fifteen minims, and push boldly on, believing that, as with quinine and iodide of potassium, troublesome physiological symptoms are here more likely to follow small quantities than large. Some authorities strongly insist upon the necessity for producing some conjunctival and gastric irritation before we can obtain the full curative influence of the drug; but the author was opposed to this, believing these symptoms to be an unnecessary addition to the discomfort of the patient. When they do arise, they need not cause any alarm; but the sickness which sometimes follows each dose of the medicine is quite a fatal obstacle to its use. It is important to see that the natural elimination of the drug is not checked by any renal obstruction; and Dr. McCall Anderson warns us that patients, under the influence of arsenic, are specially susceptible to cold. May it not be, however, that the bronchial irritation occasionally observed may really be due to the curative influence of the remedy causing metastasis to the pulmonary mucous membrane? The liquor arsenicalis seems to be, on the whole, the best preparation; the liquor sodæ arsenitis being, in the author's experience, in no degree less irritating. Children will bear large doses with impunity; and although it is generally held that girls can take more than boys, the only case in early childhood in which it had been found seriously to disagree belonged to the female sex.

Finally, it may be asked: Can we really cure chronic disease with arsenic? and the answer must be in the affirmative, if we get our case early, treat it systematically and carefully, continue the use of the drug for some time after the skin has become clear; and remember the importance of good food and air, and mental and bodily rest.—*British Med. Journal*, Aug. 23, 1872.

Chrysophanic Acid in Skin Diseases.

In the *Wiener Med. Presse* (1878, Nos. 37-40), Dr. J. NEUMANN records his further experience of this remedy in skin affections. He finds it useful not only in psoriasis and parasitic diseases (such as pityriasis versicolor, herpes tonsurans, eczema marginatum), but also in chloasma uterinum; treated with chrysophanic acid, the latter disfiguring affection may be caused to disappear in a very short time. It exercises a favourable influence also on syphilitic skin diseases and lupus, and its effectiveness seems to be considerably increased by the addition of thymol.—*Glasgow Medical Journal*, September, 1879.

Carbolic Acid as a Remedy against Bee Stings.

Dr. KLAMANN publishes, in the *Allgemeine Medicin Central-Zeitung*, a case of bee-sting, followed by acute symptoms of poisoning, which was relieved within a very short time by a subcutaneous injection of carbolic acid. The patient—a robust, strongly built young woman—was stung in the lower lip by a bee. Soon afterwards she vomited; her face became flushed; the right half of the face began to swell, and the swelling soon spread over the whole face. The woman fainted, and was laid on her bed. When Dr. Klamann saw her soon afterwards, he found her unconscious; the face was dark-red, and much swollen: the sclerotics were injected, the lips cyanotic, the lids oedematous, the fingers and toes pale and cold. The patient did not answer when spoken to; the pulse was 72, hardly perceptible; respirations 24. Nothing abnormal could be detected in the heart, but the impulse was weak. The extremities were immovable. Cold compresses were immediately applied to her head, and five milligrammes of carbolic acid in solution were injected under the skin, near the spot where she had been stung. At the same time sal volatile was held to her nose. In about a quarter of an hour the swelling at the lips and eyelids began to abate visibly; consciousness returned gradually; and the mouth could be opened. The tongue was somewhat swollen, but the patient could swallow without much difficulty. In the course of three-quarters of an hour the patient had three attacks of convulsive trembling of the whole body, together with violent twitchings of the muscles of the face. During each of these attacks the patient was very restless; her face became flushed, and she threw her head about. After each attack her face became suddenly pale, the skin of her whole body grew cool, and the pulse could hardly be felt. Gradually, however, the symptoms of poisoning disappeared, and the patient could open her mouth and swallow a few drops of spirit of sal volatile in water. She passed a good night, and the next day went about her work as usual. The lower lip remained slightly swollen during the next few days. A fortnight before the accident she had been stung by a bee in the left forearm; after which the whole limb became swollen, and urticaria broke out over the whole body. The arm was still swollen when she was stung in the lip; and the injection of carbolic acid appeared to exercise a favourable influence on the arm, which, on the next day, had recovered its natural size.—*British Medical Journal*, August 16, 1879.

Surgery.

Sympathetic Ophthalmia.

In a lecture delivered at his ophthalmic clinic, Dr. DE WECKER, (*Gaz. des Hôp.*, June 5) made the following observations :—

Sympathetic ophthalmia is a form of irido-choroiditis characterized by a peculiar plastic tendency. From the commencement the exudations tend rapidly to attach the iris to the crystalline. In an ordinary irido-choroiditis such adhesion takes place only at the edge, the rest of the iris being free; but in this form the iris is applied to the whole surface of the lens by very adherent exudations. Again, the exudative masses which form with the choroid have a special tendency to retract. The anterior chamber then, in place of presenting the shape of a funnel, assumes, in consequence of these retractions, an inverse form, so that the antero-posterior becomes its smallest diameter. As a consequence of its numerous and intimate adhesions with the crystalline, the iris becomes greatly distended and vascular. This irido-choroiditis most frequently arises in consequence of injury done to the other eye, the accidents which most expose to it being those which affect the anterior portion of the ciliary body, the impaction of the iris, and the impaction of a fragment of the crystalloid. In its progress sympathetic irido-choroiditis leads to the separation of the pericornean zone, the choroid becoming sometimes entirely detached from the sclerotic owing to the great retraction of the adhesions. This is rapidly followed by the softening of the eye, an essential phthisis. In young subjects the inflammation may pass away, and the masses of exudation become absorbed, so that the anterior portion of the eye is sufficiently clear to allow of the fundus being seen. Very little vision, however, returns, and the affection is frequently propagated to the retina and optic nerve.

Sympathetic ophthalmia, for the most part, appears in the period between the seventh and the fortieth day. During the first week after the injury of one of the eyes it is not to be feared, and after the sixth week the greatest danger is over. Nevertheless, Dr. De Wecker has published a case in which the irritation did not supervene until twenty-six years after the primary lesion. The difference of time at which it appears may depend upon numerous causes—on lesions of the interior of the eye, or on effusions of blood which may supervene; or a bony or calcareous mass, having penetrated the eye without producing any grave occurrences, and remaining there immobilized for a long time, may from some cause undergo displacement, giving rise to new traumatism that does not prove so indolent as the first, and induces a sympathetic irritation of the other eye. Sympathetic ophthalmia sometimes assumes a serous form; but this is rare, and is far less dangerous than the true plastic irido-choroiditis. The latter is so dangerous that it is of great importance to recognize it from its outset. Not infrequently it appears suddenly; but when there are premonitory symptoms they also implicate the ciliary nerves of the other eye. Vision becomes easily fatigued; there is pain; the amplitude of accommodation is diminished; and the eyes become rapidly injected, especially after sleep. These symptoms should put the practitioner on his guard, for sympathetic ophthalmia may rapidly appear.

Some twenty years ago the London school especially numbered ardent partisans of enucleation, every lost eye being condemned to be removed. This practice, however, is not sufficiently justified, especially in young subjects. It is a considerable operation, and we should remember that a patient who can preserve an eye that is still nearly regular in form is in a different position to one from whom the globe has been removed. In old persons, about the age of sixty, the question is

more simple, as sympathetic accidents are less to be feared. Enucleation should be practised when there are premonitory symptoms of irritation, fatigue of the eyes, peri-keratitic injection, and slight precipitates in the aqueous or vitreous humours. We should not hesitate to operate, even when the other eye has as yet exhibited no symptom, when we suspect that a foreign body may be encysted in the eye, and when this eye is still sensitive, and when retracted cicatrices cause redness of the eye from time to time. When the eyes remain painful, and if palpation of an injured eye induces attacks of pain in it, enucleation is also justified. "Here are indications enough to show that I do not refuse to practise this operation: but with regard to an indolent eye I have my reserves, and I reject it, because I fear exposing the patient uselessly to a sympathetic ophthalmia."

A surgeon finds himself in a very embarrassing position in a case in which vision is already lost in the eye that is the subject of the sympathetic ophthalmia, while a passable vision yet remains in the injured eye. What is he to do? The question of enucleation cannot be raised here. It has been proposed to divide the channels of transmission, the ciliary nerves, by penetrating the sclerotic at the level of the seat of injury. Dr. De Wecker considers it preferable not to divide the ciliary nerves in the interior of the globe, because such incisions are always dangerous when the object is to preserve the eye, but to perform their section at the exterior of the globe, around the optic nerve. Contrary to Graefe, he recommends that all operations on the eye attacked with sympathetic ophthalmia should be entirely abstained from. It is in no case possible to detach the iris from the crystalline and the ciliary processes; and the operation for artificial pupil has always furnished unfortunate results. It is to medical treatment we should have recourse at the commencement of a sympathetic ophthalmia, and this should be the same as in plastic and parenchymatous iritis, having as its basis the most energetic mercurialization. After a certain time occlusion of the pupil results from the various anatomical changes that have taken place; but here also no operation should be performed on the iris. Sometimes, however, we may feel compelled to resort to an operation at the earnest instances of patients who still retain a good perception of light over a sufficient field of vision. But even in these cases we should not allow ourselves to be persuaded unless the patient has been free from all accidents for several years. The operation should be performed as in Graefe's operation for cataract.

Irido-choroiditis may occur *spontaneously*, and it is often observed in young girls at the period of puberty and in women who have reached the menopause. The lesion is connected with the irregularity in the functions of the uterus which occur at these two epochs; and in cases of dysmenorrhœa it should especially be attended to. When menstruation has become regular the affection of the eye is rapidly cured; and, moreover, surgical intervention is not attended with the same danger as in traumatic irido-choroiditis. The sole precaution to observe is the employment of instillations of eserine before and after the operation, in order to prevent the impaction of the iris, which might induce sympathetic ophthalmia.—*Med. Times and Gazette*, Aug. 9, 1879.

Extraction of Metallic Chips from the Eye by the Magnet.

Dr. M'KEOWN records (*Lancet*, Aug. 1878, p. 253), two cases where the eye was saved from destruction by the early use of the magnet to extract deeply seated pieces of iron chips. Dawson B., aged 24, wounded his right eye, three days previously to being seen, with a small piece of metal. The iris was attached to the lens by recent lymph, and a small clear metallic body was sticking at the margin of the adherent pupil. The body was seized by a fine pair of forceps introduced through the cornea, but slipped out of the grasp. A small pointed mag-

net was then introduced through the wound, which instantly attracted the metal and easily withdrew it. Recovery was rapid.

In the second case, a millwright, aged 32, wounded his eye with a chip of steel, three-quarters of an hour before being seen. A wound about a line in length, was seen in the ciliary region, but no foreign body was visible. A pointed magnet, cautiously introduced, detected the presence of metal which was soon exposed sufficiently to be seized by the forceps and withdrawn. In a fortnight the eye was quite well.

Dr. M'Keown refers to a paper read before the Clinical Society last March by Mr. Hardy. In the case reported a chip of steel was withdrawn by a magnet after having been lodged for seventy-two hours upon the anterior surface of the lens.—*Lond. Med. Record*, Aug. 15, 1879.

Tobacco and Alcoholic Amblyopia.

Dr. HIRSCHBERG, of Berlin, opened the discussion on this subject at the recent meeting of the British Medical Association (*British Med. Journal*, Aug. 30, 1879). He said that much attention has been devoted to it since amaurosis from smoking was described by Mackenzie; and there has been, both in England and abroad, much difference of opinion regarding the share to be assigned to tobacco in the causation of certain well-known and common cases of failure of sight. Whilst von Gräfe and many of his followers in Germany were drawing out the symptomatic differences between progressive atrophy and benign amblyopia, other observers, especially Hutchinson and others in England, worked at the natural history of the latter class of affections, and established the fact that abstinence from tobacco was followed by cure in most cases. Förster, uniting these two points of view, has given much greater definition to the subject, and shown that tobacco causes a symmetrical defect in the central part of each visual field, which accounts for all the symptoms, and which disappears partially or entirely when smoking is abandoned. The speaker had confirmed and amplified Förster's observations. He maintained strongly that tobacco is the cause of the majority of cases of amblyopia which present the following features: failure of both eyes alike, with nearly central scotoma and corresponding defect of colour-perception, without any contraction of the visual field, never passing on to complete blindness, accompanied often by other symptoms of chronic nicotism, and improving or disappearing when tobacco is relinquished. In a minority of cases, alcohol alone appears to be the cause; but the defect of the field in these is thought to be more truly central than in the tobacco-cases. In a very few cases, symptoms exactly like those from tobacco and alcohol occur without the operation of either of these causes.

A case of Tobacco-Amblyopia reported by Professor COHN, of Breslau, was read, in which the importance of considering the quantity of nicotine contained in the cigars consumed, as well as the number of cigars, was prominently brought forward.

Mr. SWANZY (Dublin) thought the amount of nicotine and other deleterious substances contained in various tobaccos had been greatly lost sight of in explaining the difference of opinion which existed in different countries as to the frequency of tobacco-amblyopia. In Germany, although smoking was almost universal, and indulged in excessively, this affection was rare, because the tobacco was light. In Turkey, the same fact might explain an observation of Mr. Brudenell Carter. In Ireland, amongst the lower orders, tobacco-amblyopia was very common, the tobacco smoked being Limerick twist, an intensely black and moist tobacco, which probably contained large quantities of poisonous matters.

Mr. NETTLESHIP, of London, was of opinion that tobacco-amblyopia certainly

did exist, but he did not think that alcohol gave rise to an amblyopia similar to that of tobacco. Tobacco never caused complete blindness. The amblyopia came on in both eyes simultaneously, but the ophthalmoscope never revealed anything approaching neuritis in this affection. Chewing tobacco was even more liable to cause amblyopia than smoking. In confirmation of Förster's observations, the speaker had found a central defect in the field for green and red. He considered mere abstinence the only essential point in the treatment.

Colour Blindness.

At the same meeting, Mr. H. R. SWANZY, of Dublin, opened a discussion on colour-blindness. He said that a good test for the colour-sense should fulfil the following desiderata. 1. It should be capable of rapidly detecting the existence and nature of the anomaly. 2. It should make the least possible demand upon the intelligence of the patient. 3. It should render deception, whether intentional or unintentional, impossible. Hence every method which depends upon the correct name being given to a colour is bad. 4. The possibility of any interference of the judgment must be excluded in order that the sensation to be tested may alone come into play. The spectroscope employed alone does not answer any of the above requirements, and can only be employed in conjunction with other methods. The method by means of coloured shadows, an application of an old experiment, as suggested by Dr. Stilling, is very beautiful, and goes far as an argument in favour of Harvey's theory of perception of colour. Dr. Stilling's pseudo-isochromatic tables have not met with universal favour. They consist of figures and letters in red and pink upon a brown background. Red and brown appear to the red-green blind as similar colours, consequently in such cases the figures and letters should not be distinguishable. Dana, of Kagerö, has published a table with coloured wools arranged in rows, which are to be recognized by the persons examined as being composed of similar or of different colours. The method of Professor Holmgren, of Upsala, has received the greatest meed of popularity. It is conducted by means of coloured wools, which are to be sorted according to a system, the two chief tests being by a skein of pale green wool and one of purple wool. By this means, the colour-sense of an individual may be tested in the space of a minute or a minute and a half, while no word need be uttered on either side, and a large roomful of other people about to be tested may look on without vitiating the tests. There is also a method much in use in these countries upon railways, etc.; it consists in a card with four coloured squares, red, green, yellow, and blue, to which the correct names are to be given. This is a bad method, for colour-blind persons are often able to name colours correctly by virtue of a certain brightness which one colour possesses as compared with another. Again, some uneducated people are not familiar with the names of colours, and in this way many seem, with such a test, to be colour-blind when not so. Holmgren, Cohn, Magnus, and Joy Jeffries have been the principal observers of late as to the frequency of colour-blindness. Donders, Fontenoy, and others have also examined large numbers. The percentages given by these observers was, amongst men, from 2.87 to 6.6. Amongst women, colour-blindness is extremely rare. The highest percentage for them is given by Dr. Minder at 1.3. Cohn, in 1061 females, did not find one colour blind; Magnus only one in 2216; and Joy Jeffries four in 7942. Mr. Swanzy had examined 1320 persons by Holmgren's method; of these, ninety were women, and none of them were colour-blind. Of the 1230 males, eighty-two were more or less colour-blind, or a percentage of 6.6. He hoped to add to these numbers, and to make his investigations more complete, especially as regards blue-yellow blindness. It is to be

regretted that the above-mentioned observers have not sought more carefully for the latter interesting, although apparently rare, form of colour-blindness. The practical importance of colour-blindness is as great as its physiological interest. It would be most desirable that the various railway companies and the Board of Trade should be induced to adopt Holmgren's test.

Dr. WOLFE (Glasgow) had examined two thousand persons, and found about the same proportion of colour-blindness as Mr. Swanzy. He did not explain his method. He thought that an efficient examination of all sailors and railway servants should be compulsory.

Dr. HIRSCHBERG (Berlin) agreed with Mr. Swanzy that Holmgren's wool-test was the best for clinical purposes. The spectrum was the best means for scientific investigation of the defective perception on which colour-blindness depended. Red- and green-blindness were not the same.

Mr. NETTLESHIP (London) had used several of the tests mentioned by Mr. Swanzy, and was strongly in favour of Holmgren's test as most reliable, and easily used for clinical work.

Mr. SWANZY agreed with Dr. Wolfe, that provision was much needed for the compulsory examination of seamen and railway officials.—*British Med. Journal*, Aug. 30, 1879.

On the Etiology of Aural Exostoses, and on their Removal by a New Operation.

Dr. J. P. CASSELLS, of Glasgow, at the recent meeting of the British Medical Association, expressed his belief that difficulties had been caused by regarding all bony tumours in the auditory canal as exostoses. There were two kinds of bony tumours in this situation, exostosis and hyperostosis, the former consisting of new growth, the latter of hyperplasia of the osseous tissue of the meatus. Dr. Cassells believed that the origin and development of an aural exostosis were as follows: A subperiosteal abscess formed over the mastoid, made its way out in the line of least resistance, and discharged; from and around the opening vascular granular growths sprouted up, and increased in size, becoming at the same time changed into bony tissue from the conversion of their cells into bone-cells. The new method of treatment advised for these cases of exostosis consisted in first passing a loop of wire over the tumour, and twisting it upon itself so as to grasp the pedicle firmly. Chloroform being administered, a sharp gouge with a curve carefully adjusted to that of the auditory canal was carried down to the base of the tumour, and, being firmly held there, two or three smart blows with a mallet effected the separation of the bony mass, which was drawn from the meatus by the wire attached. The patient on whom Dr. Cassells operated thus recovered without a bad symptom; and he believed that every aural exostosis might be easily removed in this way.—*British Med. Journal*, Aug. 30, 1879.

The Treatment of Non-Suppurative Hypertrophic Catarrh of the Middle Ear.

In a paper on this subject, read at the recent meeting of the British Medical Association (*British Med. Journal*, Aug. 30, 1879) Mr. LENNOX BROWNE said that he preferred to treat the subject in its broad aspect, because he feared that the discussion of the subject of intratympanic injections might give to many the idea that such was the treatment *par excellence* for chronic middle ear disease. He quoted from authorities to show how many aurists had abandoned this measure, and how many more had found it necessary to either greatly limit the cases in which they pursued it, or to reduce to a minimum the strength of the fluids used. He then proceeded to show objections to the procedure alike on physical,

anatomical, physiological, and practical grounds. Quoting at length from Wreden, of St. Petersburg, who had made most complete experiments on models, as well as on the dead body and on the living subject, it was urged that, to send fluids in the forms of drops or as sprays, it was necessary to pass the instrument through which they were introduced quite within the tympanum, a proceeding of great danger, being liable to injure the ossicles and certain to set up suppurative inflammation of the drum; or at least to pass the instrument far beyond the isthmus. But fluids could be driven *en masse* by great force, this also being a measure only more dangerous than the other. The anatomical relations of the tympanum were pointed out, and it was shown how much danger there was of cerebral inflammation, of jugular phlebitis, of mastoid or labyrinthine suppuration, or of facial paralysis, if an acute catarrh were induced. Stating how invariably severe were the symptoms when fluid really entered the tympanum, Mr. Lennox Browne expressed his belief that, when authors reported that they had never had a bad result, such an experience showed that the injected fluid had never passed beyond the isthmus of the Eustachian tube. Again, there was the physiological objection. The tympanum was an air-cavity, whose office was impaired by the presence of a very little mucous fluid, when such was effused as a result of disease. It was often very difficult to disperse this fluid, and there was a great tendency for the lining of the cavity to become thickened, and, as a natural consequence, for its absorptive properties to become diminished. Why should one expect medicated fluids (necessarily, for safety, of very feeble quality) to have a good effect, and why not a bad one, considering the injury done by simple water when it entered the tympanum, as in bathing or on use of Weber's douche? And supposing these fluids were not absorbed, nothing but harm could result, as many authors, Kramer and Bonnafont among the number, had agreed. When one considered the intimate relation of the mucous membrane of the throat and middle ear, and how frequently topical applications of strong mineral solutions failed to cure hypertrophic inflammatory conditions in the former region, what right had we to suppose that these feeble fluids would do good to similar affections of the middle ear? On all grounds, therefore, Mr. Browne objected to this treatment. He stated that after their use he had never, on subsidence of the increase of bad symptoms—in his belief the only proof of entry of fluid into the tympanic cavity—found the slightest gain of hearing power. On the other hand, he had often seen most alarming inflammation induced. If, therefore, they were to be employed at all, he would limit their use to suppurative cases in which there was already a pervious tympanic membrane, or he would, at the time of making them, perforate the membrane, a procedure now established as free from danger. The speaker concluded by pointing out that, by means of inhalations, Valsalvan, Politzer, and cathartic inflations, with either pure air or medicated vapours, by use of the post-nasal douche, by faradization, by use of the exhausting speculum (an improvement of Siegel's instrument being exhibited) and lastly, by careful attention to the constitutional diathesis of each individual case, it was possible to greatly alleviate—he doubted if they were ever cured—the conditions under consideration.

— Intratympanic Injections.

Dr. WEBER-LIEL's experience of sixteen years of aural practice, has forced him to give up the idea that it might be possible to cure inveterate catarrh of the tympanic cavity by means of intratympanic injections of medicated fluids. 1. The symptoms of catarrh of the tympanum may depend upon extension of a simple catarrh from the Eustachian tube and the pharyngo-nasal cavity; then the latter only must be the object of treatment. In this treatment, injections of

strong nitrate of silver solutions into the mouth of the Eustachian tube, followed four days afterwards by the use of the air-douche, will be found of the best effect in reducing the catarrhal symptoms. But in order to avoid inflammation of the tympanum, not more than a few drops of the solution must be blown in with force by means of the Eustachian catheter; and the patient must be forbidden to blow his nose till four hours after the injection. 2. Or, secondly, the symptoms of the intratympanic catarrh are due not only to a catarrh of the tube, but to a collapse of the walls of the Eustachian canal, dependent on insufficient or paralyzed action of the Eustachian tube muscles. In such cases, not intratympanic injections, but the awakening of the activity in the tubal muscles by intratubal electricity, must be the treatment, to cause the disappearance of the symptoms of the secondary intratympanic vascular stasis and catarrh. 3. Symptoms of congestions and catarrh of the tympanic cavity may arise from alterations of the vaso-motor and trophic nerves and of the sympathetic supplying the tympanic cavity. Dr. Weber-Liel has found solutions of nitrate of silver, corrosive sublimate, and common salt, to produce inflammation and perforation of the membrana tympani. Carbonate of soda, however, has not this effect. Mucus, incrustated and transuded purulent matter, may be diminished by it. Tissue (false bands, for instance) and intratympanic adhesions may be softened by it; so that it may become more easy to loosen intratympanic adhesions by means of the air-douche, and to cause absorption of hardened masses. For this kind of catarrhal affection he has found intratympanic injections to have a really good result. The injections, combined with air-pressure, were effected by means of his pharmacokoniontron.—*British Med. Journal*, Aug. 30, 1879.

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Removal of the whole of Right Parietal, and half the Frontal Bones, the result of Burns; Skin Grafted on Surface of Dura Mater; Recovery.

At the recent meeting of the British Medical Association (*British Med. Journal*, Aug. 30, 1879) Dr. J. R. Hayes related the following remarkable case:—

On May 24, 1874, Dr. Hayes was called to see Mrs. S., aged 32, who was found insensible, lying with her head and face on the hearth, where a turf fire had been burnt out. The upper part of the cheek and eyelids of the right side were vesicated; the forehead and side of the head also suffered; a small portion of the skin over the parietal bone appeared charred. She was quite unconscious, and continued so until the following morning. For three or four days, she was greatly depressed, but free from pain. Reaction having set in, she suffered very much from pain and sleeplessness, which was relieved by full doses of opium. She appeared to improve until about the sixteenth day, when suddenly she became slightly delirious, and suffered from nausea and occasional vomiting, with paralysis of the left side. The face was not engaged. Those symptoms passed off in ten days, and her health gradually improved. The injured part of the face and upper portion of the ear, which had sloughed away, cicatrized, and she was able to go about doing her household work. About October 1st, the bones had separated at the sutures in a line extending from the mastoid portion of the temporal to the posterior angle of the parietal, along the lambdoid and sagittal sutures to the superciliary ridge, and onwards to the outer angle of the frontal bone. On October 3, Dr. Hayes removed the bones included (the whole parietal and half the frontal). The under surface of the bone was covered with a thick curdy matter; the depressions for the arteries, etc., were obliterated. No pulsation could be felt over the meningeal arteries, and a quantity of fetid pus welled up from between the hemispheres. The dura mater, which was covered with granulations, continued to secrete pus freely. Finding the ulcerated surface was not cicatrizing,

about December 2d, Dr. Hayes grafted skin on four places on the dura mater; three of them took, and cicatrization commenced from these points, and covered the whole of the exposed surface, the skin-grafts acting successfully. During the whole time, and up to the present, she has not suffered from any brain-symptoms, except that, when the skin-grafts were put on, he placed a pad of lint over them, and bound it with a strip of adhesive plaster. The following day, her left side, including the face, was paralyzed; this continued for four days, when the pad was removed, and the symptoms immediately passed away. She has been since, and is at present doing her ordinary work, and carries a heavy basket on her arm for a great part of the day. Her general health is excellent.

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On the Treatment of Fistulæ and Scars of the Cheek.

In a short communication to the *Lancet* (July 19, 1879) on this subject, Mr. EDWARD BELLAMY says it is, in the first place, all-important to find out exactly the course taken by the fistula or fistulæ—a matter of considerable difficulty sometimes; and the following classification may have its value in diagnosis: 1. Those opening into the cheek, with a track above the level of the buccal or labial mucous membrane, and which usually discharge saliva only. 2. Those whose track lies below this level, and which discharge pus and muco-purulent fluid and no saliva. 3. A complication of both forms, and which discharge both pus and saliva. With regard to the accurate detection of their course, an ordinary probe frequently gives merely a general idea of the direction without passing into the offsets. Mr. B. has always found that a fine filiform bougie, or, better still, a fine India-rubber French bougie, is more useful than anything else. After having determined the course, irritating cause, and condition of the fistula, in order to avoid further scar, the dead bone, if there be any, is to be removed by delicate but strong forceps or gouge, and afterwards the track should be washed out with a very strong solution of sulphuric acid, which has the effect of completely destroying the fistulous track; or by the introduction of minute crystals of nitrate of silver, until the granulations appear at the orifice, gentle pressure being maintained. A cicatrix, however carefully the treatment be carried out, is sure to remain, unsightly always and often troublesome, appearing as a "pucker," or adhesion to the underlying bone; and with regard to its treatment, Mr. Bellamy states, from his own experience, that two methods are open to the surgeon, dependent on the extent or strength of these adhesions. The first consists in introducing a fine blunt-pointed tenotome through the tissue of the cicatrix—laminating it, as it were—taking great care to leave it in free communication with the integument adjacent to it; next, to introduce between the split surfaces a thin strip of sheet-lead, which should be kept in, to prevent the adhesion of the surfaces divided by the tenotome. After a few days, the superficial lamina of the cicatrix may be subjected to gentle movement over the lower lamina, which the patient may conduct himself; this prevents adhesion, and renders the tissue pliant and assimilative. This may be termed the "passive movement" of the cicatrix. The second plan, if the former fails—or indeed it may be advisable at first—consists in dissecting away the adherent tissue entirely, vivifying the edges of the cicatrix and bringing them together by means of fine entomological pins, and so gaining a mere linear scar at worst, care being taken, by movement, to prevent permanent adhesion. The great elasticity of the cheek structure permits of this without any deformity resulting as regards expression. Manipulative skill is necessary for success, but results appear so satisfactory that Mr. Bellamy thinks that, in cases where it is important, for the sake of the patient's looks, operative proceedings should be undertaken, the above suggestions may be of use.

A Case of Long-continued Priapism accompanying Leukæmia.

Dr. SALZER, of Worms, reports (*Med.-Chir. Rundschau*, June, 1879) the case of a man, 46 years of age, who suffered for seven weeks from persistent priapism. He had previously suffered from intermittent fever, but was at this time in apparent good health. One morning he was awakened by an intensely painful erection of the penis, that proved utterly rebellious to treatment. Leeches, warm fomentations, chloral hydrate, and even chloroform narcosis were tried in turn, but all without success. The urine was passed with difficulty, usually in short jets, and most readily in the knee-elbow position. Physical examination revealed only marked enlargement of the spleen. Finally, after the penis had been kept for three weeks constantly enveloped in strongly camphorated narcotic poultices, opium and camphor being administered internally at the same time, the priapism gradually disappeared, having persisted fully seven weeks. During the week preceding this attack, the patient had had two attacks of priapism, one of which lasted only a few hours, and the other twenty-four hours. After the appearance of the priapism the patient rapidly lost strength and acquired a cachectic appearance, and the spleen progressively increased in size. Two months after the priapism disappeared there was complete loss of sexual power, and the patient died about eight months afterward. The blood was not examined microscopically, and an autopsy was not permitted.

Dr. Salzer collates from medical literature eight cases of priapism occurring in connection with leukæmia. Various theories have been brought forward to account for the priapism in these cases. Kremme ascribed it to extravasation of blood into the corpora cavernosa, and Longuet to impeded circulation in the smaller vessels and the formation of thrombi, resulting from the altered condition of the blood, while Neidhardt thought that irritation of the nerves might possibly be the exciting cause. Dr. Salzer thinks that the rapid disappearance of the priapism in the two first attacks in the above case argues against the occurrence of an extravasation of blood. He believes that both the temporary and the persistent attacks of priapism were due to irritation of the nervi erigentes. It is well known that priapism may be produced both by peripheral and by central irritation of these nerves. As examples of the former, he adduces the erections accompanying inflammation of the urethra or of the neck of the bladder, swelling of the prostate, etc.; and, as examples of the latter, the erections of insane persons, or that follow injuries of the spinal cord. The priapism of leukæmia, he claims, differs from these varieties chiefly in its longer duration, and hence for its development some special cause must be sought. This may possibly be found either in the presence of anatomical changes in the nervi erigentes, or in pressure on them by swollen lumbar glands.—*Med. Record*, Sept. 6, 1879.

Triple Amputation.

An employé on the Brest Railway fell from a carriage while in motion, dislocating his elbow, and two other carriages passed over his legs. He was taken to the hospital in a state of syncope, when it was found that the right leg was only held to the thigh by a few slips of muscle and the skin, the femur having been cleanly severed just above the knee and the femoral divided—hemorrhage being arrested by the instant formation of a clot. The left foot and ankle-joint were broken up into a confused mass. Dr. Léscléue, surgeon to the Brest Hospital, amputated at once the right thigh, having only to shape into regularity the musculo-cutaneous strips; but he did not remove the left leg until about fifteen hours afterwards, reaction having by this time taken place. Gangrene having invaded

the forearm of the left side, on which the dislocation of the elbow had taken place, amputation was performed on the seventeenth day. The patient did very well, having been cured long since, and is now able, by means of apparatus, to walk. M. Rochard brought the case before the Academy of Medicine as a unique example of a patient having survived a triple amputation performed for the same injury. Baron Larrey, however, observed that the case was not unique, for he had seen a man at the Invalides who had undergone amputation of the four limbs; and he had also seen a young Arab in Algeria, who had recovered after having had the four extremities divided by a train.—*Med. Times and Gaz.*, Aug. 23, 1879, from *Gaz. Hebdomadaire*, Aug. 8.

Case of Fracture of the Vertebral Arch of the Fourth Lumbar Vertebra.

GEMMEL reports (*Allg. Med. Cent. Zeit.*, No. 52, 1879) the case of a workman who had fallen from a height of fifty-three feet through the giving way of a scaffolding. When first seen, he was in a state of imminent collapse, so that it was thought advisable to put off the examination till the next day. In the mean time, wine and camphor were given. At the examination, the patient complained of pain in the region of the fourth lumbar vertebra, the tuber ischii, and the right tibia, about six centimetres below the knee. He was not able to move his legs. He had not micturated since his accident, neither had his bowels been moved. The skin over the painful spots showed numerous wounds, which were partly superficial, partly profound, especially on the right tibia, and seemed to have been caused by falling bricks. The processus spinalis of the spinal column was painful to pressure, especially in the region of the fourth lumbar vertebra. The spinal process of this vertebra was dislocated; pressure on the muscles of the back to the right of the processus was very painful; crepitation could not be distinctly heard. The patient could only lie on the left side; the bladder was full, and the urine had to be drawn off by means of a catheter. The patient said afterwards that he had not felt the catheter when it was introduced into the urethra. Cutaneous sensibility of the right leg was absent, the sensibility of the left leg was much weakened. Both legs were powerless, though the muscles of the left extremity could be made to contract by a strong faradic current. The internal organs were normal. *Treatment*.—Extension of the spine. Application of ice to the affected part. Clysmata. Stimulating medicines. The next day the patient was able to move the toes of the left leg; sensibility was also partly restored. The bladder and rectum were still paralyzed, so that the patient passed his motions in bed. He objected to the extension of the spine, as it caused too much pain. He was treated with the faradic current, one pole being applied above the injured spot, and the other moved along the muscles of the legs. Three weeks later he could move the left leg freely; he was conscious of being touched with a pin, but could not say whether the point or the head had been applied to him. The right leg and foot were anæsthetic, with the exception of the inner side of the thigh and fore leg, the anterior surface of the thigh and the tibia, the big, second, and third toes. The patient could move his legs, but not without great exertions. The bladder and rectum were still paralyzed; the urine had a strong ammoniacal odour, and left a muddy sediment. The pain in the spine was so great that the patient could only sit up by resting his body on both arms. The treatment consisted in the application of the electric current, both as before and to the bladder. Thirty-one days later the bladder and rectum were still paralyzed. The cystitis had disappeared. The bowels never moved without an enema in spite of the faradization of the rectum. The patient passed his urine and feces in bed. He

could sit up without pain. The right leg could be freely moved, with the exception of the foot. Twenty-seven days later the patient could walk with the aid of a stick. His state was much the same as before. The skin was anæsthetic in the right gluteal region near the anus, on the planta pedis, the region of the musculus peroneus, and the external portion of the thigh. He complained of a sensation of numbness in both legs and feet, saying, "I feel as if my legs were covered with thick woollen stockings." The temperature was raised on the injured leg. When told to walk, he complained of a feeling of weakness in the knees, which bent under him. His gait presented the characteristic symptoms of *tabes dorsalis*. He kept looking straight before him, threw his legs about and raised them without removing them from the floor. He walked with his legs wide apart. When attempting to stand, his knees bent under him. If told to put his feet together, set his stick aside, and close his eyes, he began to vacillate, and ended by falling forwards. He was unable to turn round briskly. The patient was dismissed after a stay of seven months in the hospital. His condition had remained much the same, with the exception that the temperature of the injured leg was lower than that of the other extremity. The following are the noteworthy points in this case: 1. The rarity of fracture of a vertebra; 2. The permanent paralysis of the bladder and rectum; 3. The sensory disturbance of the rectum, anal region, right gluteal region, bladder, and urethra; 4. The circumstance that the affection assumed the characteristic appearance of *tabes dorsalis*; 5. The feeling of numbness in the right *planta pedis*, which region was also anæsthetic. The patient had always enjoyed good health before his accident, and the family history was good.—*London Med. Record*, Aug. 15, 1879.

On the Cause of Eversion of the Limb after Fracture of the Neck of the Femur.

At the late meeting of the British Medical Association Mr. EDWARD OWEN read a paper in which he showed that the mechanical explanation of the eversion of the limb after fracture of the neck of the femur was quite sufficient, without bringing in the question of muscular action. Sir Astley Cooper attributed the eversion to the superior strength of the muscles of external rotation; and his views, which have afforded an excellent working hypothesis, have been generally adopted by subsequent writers. Mr. Owen asserted that the thick mass of muscles of internal rotation, which filled up the deep fossa between the front of the iliac crest and the great trochanter, are more powerful than the muscles of external rotation, though the latter are much more numerous. This important fact he had ascertained by testing the relative power of the two groups of muscles by means of a specially arranged spring-balance and indicator. The muscles of internal rotation are the *tensor fasciæ femoris*, the anterior two-thirds of the *glutæus medius*, and the front part of the *glutæus minimus*. The *pyriformis* and company would probably be rendered useless as external rotators when, after fracture of the neck of the femur, the great trochanter had fallen towards the great sacro-sciatic notch. Some time since, an old woman came under treatment, who, three months previously, had broken the neck of her thigh-bone. There had been no attempt at union, and the limb lay persistently on the whole length of its outer side: but, on being instructed, the patient could roll it inwards until the foot was at right angles to the surface of the bed. She could not have done this if the characteristic eversion had been due to the superior strength of the external rotators. The posterior surface of the thigh of a man lying supine on a flat surface hardly touches that surface, the weight being transmitted partly by the pelvis, partly by the calf. The centre of gravity of the limb is well to the

outer side of a straight line connecting the middle of the acetabulum and the heel. In its search for stable equilibrium, the sound limb rolls outwards until further eversion is checked by the front of the capsular ligament being rendered tense. In this position we find the limb in sleep, after paralysis, and in death. In the mortuary, rigor mortis having passed off, division of the front of the capsule is followed by still further eversion; or, the neck of the femur being divided inside the capsule, the limb will roll over on to its outer side. Similarly, when the neck of the living femur is broken, the limb "tumbles" into the position of eversion; muscular action has nothing to do with it. The administration of chloroform is never followed by a righting of the limb. Those rare cases of fracture of the neck with inversion are to be explained by the fact of the limb having been left in a position of inversion by the violence which caused the fracture; if the fragments are unhitched, eversion at once declares itself and persists. When the femur is fractured below the level of the lesser trochanter, eversion is still a most characteristic feature of the lesion.—*British Medical Journal*, Aug. 30, 1879.

Osteotomy in Genu Valgum.

At the late meeting of the British Medical Association (*British Med. Journal*, Aug. 30, 1879) Dr. W. MACEWEN said that there were several points, in addition to those already published, concerning the operation which he had advanced for the rectification of genu valgum by the transverse incision through the femoral diaphyses, which he considered worthy of attention. The first related to the direction of the osseous incision, which ought to be made so as to avoid the external condyle, which may be effected by cutting parallel to the condyles, or by commencing the incision a short distance above a line drawn from the upper margin of the external condyle across the limb to the inner side, the incision commencing from the inner side of the limb. The exact seat of the incision in the soft parts ought to be noticed, with the intention of showing that an incision may be made which would cut no vessel requiring a ligature. This may be done if a point be selected where the two following lines meet each other: a line drawn transversely from the upper border of the patella when the limb is in the extended position; and a line drawn longitudinally, about half an inch anterior to the spine, for the insertion of the adductor magnus tendon. That position is below and anterior to the anastomotica magna, and above the superior internal articular artery; and by making an incision half an inch in length directly to the bone at this point, it is impossible to touch any normal distribution of these branches. The extent of the transverse osseous incision depends upon the nature of the case: in young persons, fully two-thirds of the bone is divided; in old persons with hard brittle bones, the whole bone up to the external dense layer is cut, and force is never applied in bending or breaking the limb to a greater extent than what may be easily done by taking the limbs in the surgeon's hands, and using the one as a fulcrum, the other as a lever. This femoral incision neither impairs nor arrests the growth of the bone, as the experience of the last three years has pointed out; those operated on being increased in height as an immediate result of the operation, and the limbs have grown proportionately since. One or two remarks regarding the pathology of genu valgum may be mentioned, as they have a practical bearing. In genu valgum, there is a lowering of the internal condyle in all cases. Secondly, this lowering may be due to a bend in the lower third of the femur, to a lowering of the internal part of the diaphyses, or to an actual increase in the length of the internal condyle. A slight increase in the length of the tibial diaphyses toward the inner side is also in some cases present; but, in the great majority, not to a sufficient extent to require operative interference. Generally, the

knock-knee is made up from several of the above pathological conditions. Regarding the tibial incision in knock-knee, in by far the greater majority of cases it is not required in any way; even the most aggravated cases have been rectified without it; but, in some aggravated cases, it may be justifiable, and may contribute slightly to the restoration of the symmetry of the limb. The division of the tendon of the biceps often does more good than a tibial division. The division of the femur from the external surface has many disadvantages, and not one single merit. Regarding anterior tibial curves and their correction, where a single osteotomy can be performed, it is to be preferred; but where a series of osteotomies is required, a wedge of bone is more easily removed, and is more satisfactory.

Subcutaneous Osteotomy in Young Children.

In a discussion at the last meeting of the British Medical Association on the subject of subcutaneous osteotomy, Mr. ROBERT WILLIAM PARKER said that the East London Hospital for Children had afforded him considerable scope for the performance of osteotomy, and out of a large number of osteotomies performed on children varying in age from three to thirteen, he had never lost a case; and in only one instance had there been any suppurative. This one exception had been a severe case of erysipelatosus œdema, which, however, yielded to treatment, and the boy finally made a good recovery. It was now generally admitted that the cause of genu valgum lay in a hypertrophic lengthening of the internal condyle of the femur; and although this fact had long been known, it had never occurred to surgeons to utilize the knowledge for the correction of the deformity. Mr. Parker thought that a special acknowledgment was due to Dr. Ogston for having thought out this treatment, and for his boldness and success in putting it into practice. It was no doubt the first step in the right direction in the treatment of this disease. Personally, however, he had not adopted Ogston's operation, but the modification of it first performed by his colleague, Mr. Reeves, and described by the latter gentleman in the *British Medical Journal* as "subcutaneous extra-articular osteotomy."¹ This operation was a less serious one than Ogston's, and just as effective. He (Mr. Parker) believed that in children the operation could be performed without entering the joint; for the layer of encrusting cartilage, together with its synovial lining, would stretch rather than crack sharply off, as was probably the case in adults. Fortunately for his patients, he had had no opportunity of putting this opinion to the test of the post-mortem room. But clinical facts bore him out. Thus, out of about twenty-five operations, in three or four there had been slight effusion into the knee-joint. In one case, this effusion had been especially distinct, and was anticipated at the time of the operation; for, in using the chisel, owing to the extreme softness of the condyle, it had accidentally entered the joint, a fact of which he was well conscious. He believed, therefore, that the extra-articular operation was feasible in children, and that it was merely a matter of operative dexterity. If, six or eight days after the operation, on removing the first dressing, the joint was found to be normal in size, and capable of being spontaneously flexed to about two-thirds of its extent, he did not see what more could be wanted in support of the belief that the joint had not been entered. Mr. Parker had been gradually led to the present plan of removing the dressings about the fourth day; for he found that the wound was generally closed by this time. He was of opinion that, in children and young adults, this (Reeves's) operation was the best, because: (1) it is a subcutaneous one; (2) it is (almost always) extra-arti-

¹ See Monthly Abstract for July, 1878, p. 323.

cular; (3) it counteracts exactly the pathological condition which causes the genu valgum; (4) because of the short time necessary for complete recovery.—*British Med. Journal*, Aug. 30, 1879.

Midwifery and Gynæcology.

The Prevention and Treatment of Post-Partum Hemorrhage.

In a discussion on this subject at the late meeting of the British Medical Association (*British Med. Journal*, Sept. 6, 1879) Dr. THOMAS MORE MADDEN, of Dublin, discussed *seriatim* the causes of *post-partum* hemorrhage, and the treatment required by each of these. Having dwelt on the constitutional conditions predisposing to flooding, and the preventive measures by which this might be warded off, even in those who had been habitually subject to this accident on former occasions, he considered the causes of flooding and the management of labour, so as to prevent subsequent inertia or irregular contraction of the uterus. The ill effect, in this respect, of the premature application of the forceps before the full dilatation of the os uteri, and also the production of hemorrhage as the result of undue delay in the second stage, were next referred to. During labour, when there was any reason to anticipate flooding, the preventive measures recommended by the author were: the rupture of the membranes in the first stage; the use of stimulating enemata of a strong infusion of ergot, or the hypodermic injection of ergotine, in the second stage; and a firm unremitting manual pressure over the fundus uteri, from the time the child's head escaped from the vulva until the completion of the third stage, which should never be hastened by traction on the cord, and the permanent contraction of the uterus was secured. In nineteen cases of flooding, the solution of perchloride of iron was resorted to; in eighteen of these, the hemorrhage was thus arrested, and in one instance it failed. Dr. Madden, however, considered that the ordinary mode of using this styptic—viz., by a syringe passed up to the fundus uteri—was a very hazardous proceeding, and exposed the patient to great and needless twofold danger of death from embolism or from peritonitis. He, therefore, recommended instead the direct application of the strong liquor ferri perchloridi to the bleeding vessels by a sponge soaked in this fluid, and carried up by the hand into the uterus, and retained there until a firm contraction was produced. Some cases were referred to in which hemorrhage, that had resisted all other treatment, was thus arrested; and Dr. Madden, therefore, regarded this as the most effectual method of treating flooding. At the same time, he admitted that it was not free from danger, or even to be adopted without grave necessity. Some of the other remedies employed in the treatment of *post-partum* hemorrhage, including the hypodermic use of ergotine, galvanism, and cold and hot injections, were referred to.

Dr. WILLIAM WALTER, of Manchester, said, that since the method of treating *post-partum* hemorrhage by the injection of hot water was brought under notice by Dr. Atthill early in 1878, he had treated in this way eleven cases in the Manchester and Salford Lying-in Hospital. The temperature of the water used ranged from 110° to 120° Fahr.; and the utmost care was taken that the tube (Hayes's) reached well up to the fundus; and that there was afterwards no impediment to the escape of the water from the uterus. The results in the eleven cases—particulars of which were given—led Dr. Walter to the conclusion that the hot-water treatment offered some advantages, in being generally accessible

and not disagreeable to the patient; but that, as a means of contracting the uterus, it was, in his experience, not to be relied on. Nevertheless, he hoped to continue the method; and he advised that the temperature of the water should be ascertained by the thermometer in every case. The recent researches of Dr. Max Runge tended to show that, if success was to follow the hot-water treatment of *post-partum* hemorrhage, the temperature of the water must not be so high as it was in his (Dr. Walter's) cases. In all the cases but one, the injection was followed by relaxation and dilatation of the entire uterus; if contraction occurred, it was but temporary; but, when the temperature of the water did not exceed 104° F., the uterus contracted without being afterwards paralyzed. No appreciable effect was produced on the pulse and general condition of the system. After the failure of the injection, the application of the induced current was successful in several of the cases.

Dr. ATTHILL, of Dublin, confined his remarks to the use of the four principal agents used for the arrest of *post-partum* hemorrhage; namely, ergot, cold water, warm water, and the perchloride of iron. Ergot was most unreliable; it took time to act, and, though valuable if administered to anticipate hemorrhage, was nearly useless at the time, even if injected under the skin. Cold was perhaps the most efficient of all agents, if used in the proper cases and at the right time; that is, while the patient was warm, and reaction consequently followed. If its use were prolonged, or the patient were cold and exhausted, it was worse than useless. It was at this stage that hot water came in with advantage, not to supersede the use of cold. Dr. Walter recorded cases in which it failed, or did actual harm; but he used it too hot, namely, at 120°, instead of 100°; and the experiments referred to at the conclusion of his paper showed that hot water was efficient in causing contraction of the uterine muscular tissue. If used at the proper temperature, hot water was far from being an absolutely efficient agent, but it was valuable; it would not replace the use of perchloride of iron, but it must sometimes render it unnecessary. Perchloride of iron was in some cases absolutely demanded, and was the most certain means of checking *post-partum* hemorrhage. It had, in Dr. Atthill's hands, saved several lives; but, like all other remedies, it was not absolutely safe. He knew of one case in which it seemed to cause instantaneous death; but he had known death to follow in a few moments from the simple act of syringing the vagina; air entered the uterus and caused death. Might this not have also been the cause of death when the perchloride was used?

Pilocarpin in the Œdema of Pregnancy.

Dr. BIDDER related (*St. Petersburg Med. Woch.*, Aug. 16) at the St. Petersburg Society of Physicians the following case, which he treated in the way described, having from previous experience assured himself that pilocarpin does not induce pains during labour: A primipara, aged twenty-five, was admitted into the lying-in hospital in her eighth month of pregnancy, suffering from considerable œdema of the face, extremities, and external genitals—the small labia forming shining tumours as large as a fist. The urine contained a considerable quantity of albumen. Various remedies having been tried in vain, and one of the labia threatening to become gangrenous, a Pravaz syringe of a solution (20 per cent.) of pilocarpin was injected twice on the 1st of the month, salivation following shortly after, and somewhat later profuse sweating. The œdema had already become much less by the next day, and on the third another injection was employed. By the 12th all œdema had disappeared, and the albumen of the urine had greatly diminished. No uterine pains were induced during this

treatment, and when her full time arrived the woman had an easy delivery of a large child.—*Med. Times and Gazette*, Sept. 6, 1879.

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Muriate of Pilocarpine in Eclampsia.

Dr. BRAUN relates, in the *Berlin. Klin. Wochenschrift* for June 16th, a case of puerperal convulsions successfully treated by subcutaneous injections of pilocarpine. The patient was a robust, healthy, young woman, who had been recently delivered of her first child. About an hour after the child's birth, violent convulsions set in and were frequently repeated. When seen by the author, five hours after delivery, she presented all the symptoms of a severe attack of eclampsia. The convulsions followed each other rapidly, and during the intervals the patient was insensible. The bladder was empty; no urine had been passed since her delivery. Large doses of chloral-hydrate were prescribed, and a subcutaneous injection of two *centigrammes* of morphia made; but without effect. During the next twenty-four hours, the patient's state assumed almost a hopeless aspect; when it occurred to Dr. Braun that, as the eclampsia of puerperal women is caused by uræmic intoxication, a diaphoretic drug would diminish the tension in the arterial system and free the blood of toxic matter. He accordingly made a hypodermic injection of three *centigrammes* of muriate of pilocarpine. This was followed by very profuse perspiration and salivation. During the next half-hour, the muscles of the eye and the face twitched a few times. No more eclamptic fits came on, and the patient recovered quickly.—*Brit. Med. Journ.*, Aug. 9, 1879.

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Auscultation in Uterine Hemorrhage.

Prof. DEPAUL, in a clinical lecture (*Gaz. des Hôp.*, Aug. 26), observes that when hemorrhage occurs during labour, it will generally be found to arise from partial detachment of the placenta, the cord being too short. "I remember," he said, "the case of a young woman whose delivery had gone on very well, when, as the head was approaching the vulva, two or three spoonfuls of blood suddenly appeared between her thighs. I immediately practised auscultation, and found the foetal heart beating irregularly. It was evident that the infant was suffering, and that it was dangerous to await the natural termination of the labour, which might last two or three hours longer. Dilatation was complete; and easily persuading the mother of the necessity of terminating the labour rapidly, I applied the forceps. Immediately after the child was extracted there followed five or six enormous clots, weighing about a couple of pounds. The child was born respiring with difficulty, but soon quite recovered. Never forget, then, whenever you meet with a flow of blood, to assure yourself by auscultation as to the state of the infant, and when dilatation has taken place, hasten to interfere whenever life seems in danger."—*Med. Times and Gaz.*, Sept. 6, 1879.

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Ergot in the Treatment of Fibroid Tumours of the Uterus.

Dr. W. H. BYFORD, of Chicago, in a paper read at the late meeting of the British Medical Association (*British Med. Journal*, Sept. 6, 1879), laid down the following propositions, and offered arguments in support of them. 1. When properly administered, ergot frequently very greatly ameliorates some of the troublesome and even dangerous conditions of fibroid tumours of the uterus, *e. g.*, hemorrhage and copious leucorrhœa. 2. It often arrests their growth, and checks hemorrhage. 3. In many instances it causes the absorption of the tumour; occasionally without giving the patient any inconvenience; while, at other times, the removal of the tumour by absorption is attended by painful contractions and ten-

derness of the uterus. 4. By inducing uterine contraction, it causes the expulsion of the polypoid variety of the submucous tumour. 5. In the same way, it causes the disruption and discharge of the intramural tumour. He said that, in administering ergot in cases of fibrous tumour, the action of the drug would depend on the degree of development of the fibres of the uterus, and on the position of the tumour with reference to the serous or the mucous surfaces: the nearer the mucous surface, the better the effect. A good result might be expected under the following conditions: smoothness of contour of the tumour, denoting uniform development; hemorrhage; a lengthened uterine cavity; and elasticity of the tumour. He would expect large fibro-cystic tumours to resist the action of ergot; and a good result was not to be expected in cases of uneven nodulated tumour, absence of hemorrhage, shortness of the uterine cavity, and hardness of the tumour. It was not essential to give ergot hypodermically, though this was a very efficacious method; it might be given by the mouth, in suppositories, etc. If the object were to cause painless absorption of the tumour, the dose should be moderate, and not too frequently repeated; if it were desired to have the tumour expelled, full and increasing doses should be given often, and continued till the object was attained. The preparation which he used was Squibb's fluid extract of ergot. He said, in conclusion, that he disclaimed any expectation that ergot would supplant all other modes of treatment.

Extirpation of a Cancerous Uterus.

Dr. VON MASSARI relates a case of extirpation of the cancerous uterus followed by a fatal result. The patient was fifty-three years old, the mother of nine children. Menstruation had ceased at the age of forty-three. A vaginal discharge had existed for two years, for six months irregular hemorrhage had occurred, and the discharge had become offensive. There was no pain, and the general condition was good. The cancerous cervix was hollowed out into an ulcerated cavity which admitted the finger, bled readily on touching, and from which a scanty offensive discharge flowed. The uterus was quite freely movable, and no trace of the disease could be discovered in the pelvis.

The operation was performed on February 1, 1879, in a room disinfected by thymol spray, and the patient was placed with her head towards the window, the thighs flexed and abducted. A mixture of chloroform 100 parts, ether 30, and alcohol 20, was used for anæsthesia. The vagina was syringed with 5 per cent. solution of carbolic acid. An incision having been made from umbilicus to pubes, the author succeeded with difficulty in pressing the intestines and omentum up into the upper part of the abdomen by means of compresses dipped in warm thymol solution. The edges of the wound were then held apart by means of a kind of clamp invented by the author, so as to allow a free view into the pelvis.

The operator then placed himself between the patient's knees, and introducing the left hand into the vagina, introduced the lowest loop of the sutures for the broad ligament at each side in a manner similar to that adopted by Freund, the needle being inserted at a point 1 cm. from the lateral border of the lip of the cervix, and entering successively the anterior and posterior pouches of peritoneum at a point 1 cm. from the border of the uterus. The first loop at each side inclosed the lower third of the broad ligament, and two more loops secured its middle and upper thirds respectively, the uppermost loop being placed outside the ovary. In closing the wound the author adopted a different method from that of Freund. Three sutures were passed from the vagina into the peritoneal cavity, between bladder and uterus, and a similar number of loops were passed

from vagina into pouch of Douglas, intended to draw down the ends of the sutures after removal of the uterus, and so complete the loops, to be tied in the vagina, and so unite the anterior and posterior cut surfaces. Two of these loops, however, were cut in separating the uterus, and the two corresponding sutures had afterwards to be passed by a straight needle from above into the vagina. During the separation of the uterus, the fundus was drawn upwards, or to the side, by means of Luer's forceps. As soon as it was cut away, the pelvis filled rapidly with blood, and the uterine and some smaller arteries were found to be spirting, and to require ligature. The cut surfaces were then brought together by the sutures before mentioned, and intermediate gut-sutures were inserted, and tied on the peritoneal side. The peritoneal cavity was sponged out, and four drainage tubes inserted, antiseptic dressings being applied. The operation lasted an hour and a quarter, and, at the end of it, the patient's condition was good; pulse 96. In the evening the pulse had risen to 118; temperature 38.3 C., and vomiting had occurred once. On the second morning, temperature 38.6 C., pulse 120; evening, temperature 39.3 C., pulse 140. There was now frequent vomiting of watery fluid, and the features had become drawn. On the third evening, temperature had risen to 41 C., pulse could not be counted. Death occurred about midnight.

At the autopsy, the peritoneal cavity was found to contain about ten c. c. of semi-purulent fluid, and the peritoneum was coated thinly with lymph. The right ureter was found to have been cut across about three cm. above its opening into the bladder, and its upper portion was included in one of the ligatures. The pelvis, and calices of the right kidney, as well as the ureter, were slightly dilated. In the removed uterus the inner two-thirds of the wall of the cervical canal was found to be infiltrated with medullary carcinoma.

To avoid the risk of wounding the ureters, the author proposes, in future, to pass bougies into them, as a preliminary to the operation. He finds, however, that Simon's method of sounding the ureters is too difficult and uncertain, and therefore proposes to dilate the urethra, pass into the bladder Simon's urethral speculum, and by its aid to sound the ureters. In one trial, he has found this easy to accomplish with the aid of an ordinary lamp light and reflector.—*Central-blätt für Gynäk.*, May 24, 1879.

Dr. F. J. KOCBS, of Bonn, in the *Archiv für Gynäkologie*, B. xiv. H. 2, relates a successful case of extirpation of the cancerous uterus. The patient was thirty-nine years old, the mother of two children. She was in good health, and menstruation was regular up to January, 1878. After the menstrual period of that month, a discharge commenced. Occasional hemorrhage, but not to any considerable degree, had also taken place, and but little pain had been felt. When she came under the author's observation, at the beginning of the following April, the cervix was found to be hollowed out into a deep crater, and enlarged by malignant growth, which reached up to about one cm. from the vaginal insertion, but nowhere overpassed that boundary. The uterus was about as much enlarged as it would be in acute metritis, and was movable, although not quite freely so. Microscopic examination of a small portion of the growth showed it to be carcinoma. The tendency to hemorrhage was considerable.

Menstruation came on on April 19th, lasting seven days; and on April 28th, the operation for extirpation was undertaken. The patient was placed with her head towards the window, and lower than the pelvis. The anæsthetic was chloroform, given by Junker's inhaler; and care had been taken to administer purgatives for several days previously. Carbolic spray of a strength of one per cent. was used at the operation. The incision was made from the mons veneris to about two finger-breadths above the umbilicus, and the edges of the wound were

held apart by retractors. It was found possible to hold back the intestines in the upper part of the abdomen by means of a handkerchief dipped in carbolic solution. The three loops of strong silk ligature were placed on the broad ligaments at each side, from above downwards, the last loop entering the vagina. Each loop was doubled, so that the innermost thread was close to the uterus, and the outer one about one cm. from it. The threads of the inner loops were cut short. A simple long, slightly curved needle was used in passing all the ligatures. The lowest loops became slack after division of the upper part of the broad ligaments, and had to be replaced. The lowest loop on the left side had again to be replaced after complete separation of the uterus from the right broad ligament, and from the bladder and rectum. In passing the loops, in order to avoid lesion of the bladder, the finger was passed into that viscus, after dilatation of the urethra. The ovaries were removed, the mes ovaria being tied with silk. A supplementary ovary was noticed on the left side, situated from one to two cm. within the left ovary. This was removed in like manner. The bladder was separated from the uterus by using the scalpel from above, guided by the finger within the bladder. The knife was also used to pierce the vagina from the pouch of Douglas, and the opening so made was enlarged to either side. The ends of the ligatures were drawn down into the vagina, after Freund's method, and the wound of the peritoneum was brought together in a transverse line by six fine sutures. The vagina was finally washed out with carbolic solution, but no tampon placed in it.

Some vomiting occurred the same evening, and it was necessary to use the catheter about ten o'clock, no incontinence of urine having followed the dilatation of the urethra. Temperature 38.2°C .; pulse 120. On the second day, temperature was 37° ; pulse 140. The same evening the pulse rose to 160, but after this improvement took place, although vomiting was frequent for several days. On the fifth day the pulse had fallen to 96; temperature 37.8°C . From this day the vagina was washed out with carbolic solution by means of a speculum. On the eighth day, on the removal of one of the sutures, a small collection of pus was evacuated from the neighbourhood of the puncture. Convalescence went on undisturbed till May 24th, the twenty-seventh day, when rigours came on, followed by febrile symptoms. On the 26th, a considerable discharge of pus took place by the vagina. Recovery was steady from this time. At the last examination reported, which was made on June 6th, a funnel-shaped depression remained at the summit of the vagina, with some small protuberances; but these did not show, microscopically, any sign of cancer. There had been no recurrence of menstrual molimen.

To simplify the operation, and avoid the difficult process of placing the lowest loops of the sutures which are to secure the uterine arteries, the author proposes, in future, before placing these loops, to separate the uterus from the bladder and the pouch of Douglas, which will not, he thinks, cause much bleeding. The loops of suture can then be easily carried by a long, strongly curved needle, like an aneurism-needle, from the pouch of Douglas into the vagina, and thence into the anterior pouch of peritoneum through the opening so made.—*Obstetrical Journal of Great Britain*, Sept. 1879.

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Anatomy and Physiology.

Supernumerary Nipples and Mammæ.

Dr. J. MITCHELL BRUCE, Assistant Physician to Charing Cross Hospital, has made an investigation of this subject (*Journal of Anatomy and Physiology*, July, 1879) based upon the study of 165 cases of supernumerary nipple discovered during the physical examination of the chests of the out-patients attending at the Hospital for Consumption, Brompton, under the care of the writer. The general results may be summarized as follows:—

1. That 65 cases of supernumerary nipple were observed within a period of three years.
2. That of 315 individuals taken indiscriminately and in succession, 7.619 per cent. presented supernumerary nipple.
3. That 9.11 per cent. of 207 men examined in succession presented supernumerary nipple; and 4.807 per cent. of 104 women.
4. That in the great majority of instances the supernumerary nipple was single; but it was without exception situated on the front of the trunk below and within the ordinary nipple; and more frequently on the left side than on the right.
5. That the distance of supernumerary nipple from the ordinary nipple was very various, and that from the measurements of these distances a series of numbers may be obtained which may possibly suggest the unit of distance between the successive pairs of nipples in the original type.
6. That a supernumerary nipple, though frequently well marked, is more frequently small or deficient in one or more of its elements—papilla, areola, follicles, or hairs.
7. That in no case was the supernumerary organ physiologically active; but that in a few cases supernumerary glands appeared to be present (in single women).
8. That inheritance was not traced in any instance.
9. That in more than one instance the anterior abdominal wall was the seat of the abnormality.

The Sensory Centres of the Brain.

The position of the sensory centres in the cerebral convolutions has been the subject of a series of experiments by LUCIANI and TAMBURINI, who have arrived at the following conclusions. The visual centres in the dog correspond to an elongated area of the second outer convolution, including the region to which Ferrier assigns the centre for the closure of the opposite eye, and that which he found to be related to movement of the eyes to the opposite side. In the monkey the visual centre includes, not only the angular gyrus, but also a large part, if not

the whole, of the convexity of the posterior lobe. The centre for hearing in the dog is found in the upper and hinder part of the third outer convolution; that of the monkey is probably to be found in the homologous region—i. e., in a zone lying immediately below the visual centre, in the upper and middle temporo-sphenoidal convolution. Both these centres are excitable with electricity in the dog and the monkey, but the effect varies according to the position, degree, and form of the stimulus. It seems to the experimenters most probable that the effects are due to the irritation of special motor centres which are included within the sensory zone, although there is no absolute proof that they may not be reflex effects of the stimulation of the centres, caused by subjective visual or auditory impressions. Unilateral destruction of the visual centre causes, almost invariably, complete amaurosis of the opposite eye, and amblyopia of the eye of the same side. Unilateral destruction of the visual centre in monkeys causes bilateral hemiopia of that half of the retina which corresponds to the hemisphere operated on. Hence we may infer that there is an incomplete decussation of the fibres of the optic nerve in the dog, and a semi-decussation in the monkey, whether the crossing is completed in the chiasma or in the corpora quadrigemina. In the retina of the dog the fibres from two hemispheres are blended at their termination, but in the monkey they are separated. The blindness which results from extirpation of the cortical centres is not only psychical, but consists in a more or less complete abolition of the power of perceiving the retinal images; there is no winking on objects being suddenly brought before the eye, and the action of the pupil to light is lessened. No ophthalmoscopic changes were visible. Bilateral extensive destruction of the visual centres of the dog produces immediately complete bilateral blindness. The complete destruction of the centres in the monkey causes bilateral hemiopia. A similar result follows the extirpation of one or both auditory centres of the dog: in the former case the ear on the opposite side is completely deaf, that on the same side being much less impaired; in the latter case there is absolute bilateral deafness. Amaurosis, amblyopia, hemiopia, and deafness, are, as consequences of cerebral lesions, transient effects, their degree varying according to the extent of the lesion and the time which has elapsed. The effects of unilateral lesion pass away more rapidly than those of bilateral partial lesions, although these may disappear after eight weeks. Whether complete compensation occurs cannot be stated. The compensation after a unilateral lesion is by means of the centres of the opposite side. If, for instance, the interference with sight and hearing on the right side, which has been produced by a lesion on the left side of the brain, has passed away, the destruction of the right centres abolishes the function, not only on the left side, but also that which had been restored on the right side. The compensation after incomplete bilateral destruction is by means of the portions remaining intact. Should further investigations demonstrate the possibility of complete or incomplete compensation after bilateral complete extirpation, the power must be ascribed to the basal ganglia, thalamus opticus, and corpora quadrigemina—just as, according to the authors, psycho-motor centres may be compensated for.—*Lancet*, Oct. 4, 1879.

Materia Medica and Therapeutics.

The Physiological Action of Chloride of Pilocarpin.

Dr. SMOLENSKI has recently investigated (*Warsaw Medical Archiv*) the physiological action of chloride of pilocarpin. He injected this substance sub-

cutaneously, in doses varying from 0.01 to 0.02 gramme, in thirty-four cases, with the following results: 1. In regard to the circulatory apparatus, within a period varying from one to ten minutes after such injection, and usually antecedently to salivation and sweating, a sensation of fulness and heaviness in the head was experienced; the face became redder, and dilatation of all the visible vessels, whether arterial or venous, was observed. In five of the cases dilatation of the vessels of the retina was observed under the ophthalmoscope. 2. The frequency of the pulse, also antecedently to salivation, was increased. The pulse became not only fuller and larger, but softer and almost invariably dicrotous. The changes in the pulse were always investigated by means of Sommerbrodt's sphygmograph, and the sphygmograms obtained pointed to a condition of diminished elasticity of the coats of the vessels; no elastic vibrations were visible. 3. The next constant symptom was salivation, which reached its acme in the course of twenty or twenty-five minutes after the injection, and disappeared after the lapse of an hour. The quantity of saliva secreted stood in a direct relation to the quantity of the drug injected. Its sp. gr. varied from 1.004 to 1.015. Traces of sulphocyanide of potassium were found. 4. The salivation was constantly accompanied by sweating. The acme of increased perspiration coincided with the acme of salivation. 5. Pilocarpin had no influence either on the quantity or the specific gravity of the urine. 6. Smolenski distinguishes two stages in the influence of pilocarpin on the temperature of the body, a primary and secondary. Immediately after the injection the temperature rose 0.1° to 0.4° C., but subsequently fell 0.2° to 1.2° C. 7. The presence of fever does not change or modify the above-mentioned effects of pilocarpin. No perceptible influence is exerted on the eye when the drug is subcutaneously injected, but after the introduction of a drop of a solution into the conjunctival sac a moderate degree of myosis is induced, which disappears in the course of from two to four hours. In this respect, however, pilocarpin is less powerful than eserine. 8. Amongst the accidental symptoms observed were nausea, headache, sensation of fatigue, drowsiness, and in one case rigours and general convulsions. 9. Atropine acts as an antagonist to pilocarpin, and nitrite of amyl prevents the occurrence of some of the occasional symptoms observed after the use of pilocarpin. The effects on the circulatory apparatus Smolenski ascribes to diminished irritability of the vagus nerve caused by decrease of blood pressure; the diaphoretic action of pilocarpine he attributes to peripheric irritation of the perspiratory nerves in accordance with Luchsinger's experiments. The sialogogue properties he also attributes to a peripheric irritation of the nerves of the salivary glands, because the section of the chorda tympani, or of the cervical part of the sympathetic, does not prevent the occurrence of the salivation. All the experiments were performed under the supervision of Professor Korczynski.—*Lancet*, Aug. 23, 1879.

Is Pilocarpin an Oxytocic?

In the *London Medical Record* for January, 1879, there is an account of the experiments of Dr. Hyernaux with this drug upon pregnant rabbits. The results arrived at were that the drug produced no symptom of labour, but, when persevered in, reduced the animal to a moribund condition. In these experiments the drug was administered by hypodermic injection. The results obtained by Dr. Hyernaux on pregnant women were similar. He administered the drug by hypodermic injections to two women. In the first woman labour resulted, but she had already been subjected to warm water enemas, and warm hip-baths, which had excited the commencement of labour. In the case of the second woman, who was subjected to the action of pilocarpin alone, labour did not result. The

constitutional symptoms, however, which were produced were marked. Immediately after the subcutaneous injection of three-tenths of a grain of chlorhydrate of pilocarpin, the patient's eyes became brilliant, then humid and tearful, the sight was obscured without great alteration of the pupil, the face became covered with sweat, which poured off in large drops. The pulse rose to 160 per minute, the respiration to 30. The whole body was bathed in sweat. The hands and feet were cold and sticky. There was profuse pyalism, accompanied by watery vomit and diarrhoea. The urine was abundant. Lastly, it is stated that the patient felt very ill. Not the slightest symptom of labour resulted from all this suffering, although this patient received three injections. In the *Medical Record* for February a case is reported by Dr. Kleinwachter, in which three injections were given, and labour resulted at the end of three days. The lying-in was attended by symptoms of metritis, but the patient recovered. In the same number of the same journal is reported a case in which Mr. Clay, of Birmingham, induced labour by pilocarpin. Eight injections were given, and by the fourth day the os uteri was dilated to the size of a halfpenny, but was still rigid. The constitutional symptoms as seen in Hyernaux's cases were present, and it is stated that at the end of six minutes after the first injection the pulse was 62, and hardly perceptible. *The collapse was so great that it was feared she would not rally.* The dilatation was eventually effected by Barnes's bags, and a living child delivered by the forceps.

Parisi, of Verona, relates, in the *Gazette Medica Italiana delle Provincie Venete*, a case in which the pilocarpin failed. Bergesio read an account, at the Congress of the Italian Medical Association, of two cases in which it was necessary to resort to Krause's method of inducing labour to aid the action of the pilocarpin. Dr. Cuzzi, of Milan, also failed in two cases to induce labour by means of the alkaloid. Whether or not pilocarpin may be of use in combating the uræmic complications of eclampsia remains to be seen. Possibly, its diaphoretic and sialogogic properties may be turned to account in the treatment of puerperal convulsions. It is in this direction that future trials should be made. The rapid action of the drug upon the skin and salivary glands must be an important point in its favour in dealing with eclampsia.

Clearly the term oxytocic (hastener of labour) cannot be applied to a drug the effects of which are, after days of misery and dangerous illness, to reduce the patient's health and strength to the lowest ebb, while, perhaps, dilating the os to the size of a halfpenny, and most likely not changing it in the smallest degree. Whatever the value of the drug may be, it is not oxytocic. Professor Demme, of Berne, says that pilocarpin is an efficacious diaphoretic and sialogogue in the treatment of certain diseases of young children. In appropriate doses, it is well borne by the youngest patients. Unpleasant symptoms are very rare, and can probably be altogether prevented by small doses of brandy before the injection. The cases in which it seems especially suitable are the parenchymatous inflammations of the kidney, with dropsy, following scarlatina and diphtheria. The ages of the patients have been between nine months and twelve years. The doses administered have been from five milligrammes to two centigrammes.—*British Medical Journal*, Sept. 27, 1879.

Physiological Action of Carbolic Acid on the Nervous System.

Dr. J. SUMNER STONE, of Wheeling, West Virginia, as the result of an experimental inquiry (*Phila. Med. Times*, Sept. 27, 1879), finds that in large doses carbolic acid may cause immediate paralysis through spinal depression. Smaller doses cause clonic convulsions of spinal origin. Convulsions and paralysis

may exist at the same time in one animal, the posterior extremities being paralyzed first.

Neither motor nor sensory nerves nor muscles are affected by carbolic acid.

Reflex action with small doses is first diminished through irritation of Setchenow's centre; it is then increased through its subsequent paralysis, the irritation explaining the ordinary occurrence of *apparent* muscular weakness in the early stage of the poisoning, while the convulsions follow its paralysis. Larger doses may paralyze Setchenow's centre immediately.

It is probable that the spinal action of carbolic acid is confined to the motor columns.

The Action of Ferments employed as Digestive Agents.

M. VULPIAN (*Le Progrès Médical*, Aug. 16, 1879), on the reading of a paper of M. Mourrut, upon artificial digestion, contributed the following note in regard to the action of the digestive ferments employed in the treatment of dyspepsia. In the lecture at the School of Medicine, delivered last session, M. Vulpian had occasion to discuss the normal and pathological secretions, and was led when considering the secretions which promote digestion to speak of dyspeptics, and of the various means which are employed to relieve them. Foremost amongst the remedies of this kind are the digestive ferments pepsin and pancreatin, to which may be added the vegetable diastase, for various observers have attributed to this ferment the power of assisting the saliva and pancreatic juice in digesting starchy materials. M. Vulpian has made a number of experiments in regard to the action of these substances. He has asked whether the ferment action is exerted freely under the conditions in which the ferments are placed in the stomach; and whether they manifest the same activity under whatever pharmaceutical form they are ingested. By means of artificial digestions, he has readily proved that the pepsins sold by different chemists have not all the same digestive power. In some cases the cooked albumen undergoes a slow but slight change. The addition of alcohol to an acidified solution of pepsin or to normal gastric juice, however, hinders the digestion. Relying upon these negative results, M. Vulpian is of opinion that it is useless to prescribe wines and elixirs of pepsin. Diastase and pancreatin also, when mixed with natural or artificial pancreatic juice, are far from exercising upon starchy materials such active properties as when they are brought into contact with them by means of simple water.—*Practitioner*, Oct. 1879.

Experiments with Diuretics.

Dr. MAUREL, a naval surgeon, communicated a paper to the Société de Thérapeutique (*Jour. de Thérap.*, September 10), giving an account of a number of careful experiments which he had performed upon healthy individuals in order to ascertain and compare the effects of various reputed diuretics. His general conclusion is that the practitioner can rely only on three of the diuretics among those which have been under investigation, viz., chlorate of potash, salicylate of soda, and digitalis, the first two even of these having but a feeble activity. The other medicinal substances reputed as diuretics—nitrate and acetate of potash, iodide of potassium, squill, and colchicum—are either devoid of action or produce effects of no importance. The reporter, commenting upon this conclusion, observes that he cannot agree with it, having no doubt that nitrate and acetate of potash and squill are energetic diuretics, from what he has observed when they have been employed in suitable cases. The indication for their employment is the point of importance. If, in place of experimenting upon healthy men, Dr.

Maurel had given some of these diuretics, which he accuses of inertia, to subjects infiltrated with serosity, and having abundant collections of water (collections whence the circulation might largely draw to produce abundant diuresis), he would have been less positive in his conclusions, and would have admitted that these substances are excellent diuretics in certain cases of dropsy, when there are no hyperæmic or inflammatory lesions of the kidneys. The reporter terminates with a remark which is often lost sight of by those who are content to draw their conclusions solely from experiments on healthy men and animals. If, he observes, the study of medicinal agents, etc., on healthy men has its great value, it does not suffice for giving a complete measure of their therapeutical power. It is still essentially necessary that clinical observation should intervene in order to obtain a complete history of these substances.—*Med. Times and Gaz.*, Oct. 4, 1879.

Medicine.

The Production of Hæmoglobinuria by Glycerine.

A remarkable difference in the action of glycerine, according as it is injected into a vein or under the skin, has lately been pointed out by SCHWAHN (*Eckhardt's Beiträge*, viii., *Centralblatt*, No. 33, 1879). If glycerine diluted with from 50 to 60 per cent. of water be injected into the subcutaneous cellular tissue, or into the stomach of dogs or rabbits, hæmoglobin is absolutely certain to appear in the urine; whereas, if an equal quantity be injected into a vein, this phenomenon does not occur. In the same way the blood corpuscles in a mixture of glycerine and blood are unaltered in form or colour. Hence Schwahn regards the hæmoglobinuria after subcutaneous injection of glycerine as the result of diffusion; certain bodies, especially the metallic chlorides and sulphates, on whose presence the integrity of the blood corpuscles depends, passing out towards the glycerine, so that cellular dissolution follows. Schwahn has found that, if the renal arteries are tied after the subcutaneous injection of glycerine, both blood-plasma and lymph become coloured red by the dissolved hæmoglobin.—*Med. Times and Gazette*, Sept. 20, 1879.

Vaccinating with Thymolized Lymph.

Dr. EMIL STERN, Medical Officer of the Royal Vaccine Institute in Breslau, gives in the *Breslaue ärztliche Zeitschrift*, No. 8, 1879, an account of some observations which he has made with vaccine matter subjected to the action of thymol. He says that last year Kobert stated that the addition of a one per mille aqueous solution of thymol to humanized lymph in no way injured it, but, on the other hand, afforded a means of preserving it. On repeating the experiments with vaccine matter in the Breslau Institute, he found that the use of lymph mingled with glycerine, salicylic acid, or carbolic acid, gave almost always negative results; while the aqueous solution of thymol, while it resisted decomposition, did not destroy the specific action of the lymph. Hiller has already shown that the addition of carbolic acid destroyed the action of vaccine matter. Dr. Stern followed Kobert's method of blowing the fresh lymph from a capillary tube on to a watch-glass, filling the tube with a one per mille solution of thymol, and blowing this also on the watch-glass. The vaccine matter and the thymol solution are then stirred together, and the mixture is drawn into a clean capillary tube, leaving

behind fibrinous coagula, blood-corpuscles, and accidental admixtures, such as broken threads, etc. The mixed lymph is always perfectly clear and transparent. Köhler is said to have never failed in vaccination with the thymolized lymph; but Dr. Stern has not been able to obtain such success. Of twenty-nine children vaccinated thus for the first time, characteristic pustules were produced in twenty, while the operation failed in 9 (31 per cent.). It must, however, be remembered that nearly one-fifth of the vaccinations with ordinary lymph that has been preserved in capillary tubes fail. As with ordinary lymph, the activity of the thymolized lymph varies with its age. The pustules following vaccination with thymolized lymph had the specific vaccine character, as was shown by the lymph obtained from them producing ordinary vaccine pustules when used for vaccination. The latter pustules, however, had only small areola, and there was no inflammatory reaction; nor was there erysipelas or any phlegmonous process. Dr. Stern has had no opportunity of testing the thymolized lymph in revaccination. He says that further observations are required; but that, so far as his observations have gone, they show that the mixture of humanized lymph with a one per mille solution of thymol does not destroy its activity, that the mixture is not more irritating than ordinary vaccine matter, and that the addition of the thymol presents advantages in regard to preservation.—*British Medical Journal*, Sept. 6, 1879.

Patellar Tendon Reflex.

At a late meeting of the Medico-Chirurgical Society of Edinburgh, Dr. BYROM BRAMWELL read a paper on this subject. After referring to the previous observations of Erb, Westphal, Grainger Stewart, Buzzard, Gowers, etc., the author proceeded to consider the physiology of the subject. He gave reasons for supposing, firstly, that the movement of the foot, which follows a sharp blow upon the ligamentum patellæ when the knee is semiflexed and the leg at rest, is not mechanical, but is due to a contraction of the quadriceps extensor femoris; secondly, that this contraction is a reflex phenomenon. He concluded that in the normal condition of things, the sensory nerves which receive the impression and convey it to the centre (lumbar portion of spinal cord) are situated in the ligamentum patellæ itself, but that in some cases of disease—where the phenomena is greatly exaggerated—the reflex may originate in the muscular fibres of the quadriceps; in the periosteum, as when a contraction follows a blow on the front of the tibia; or possibly in the skin over the patellar tendon. Two cases were detailed in support of the possibility of the skin origin of the reflex; in one the phenomenon followed a blow upon a pinched-up portion of skin, notwithstanding that every care was taken to prevent any dragging on the tendon; in the other the phenomenon was greatly lessened after freezing. The patellar tendon reflex, like the ordinary skin reflex, varied greatly in extent in different individuals; but the author had not seen any case in which it was completely absent in health; several cases, however, had been met with by Gowers and others. The writer then considered the alterations of the phenomenon which are met with in disease, dividing these cases into two classes: (1) Those in which the phenomenon is absent; (2) Those in which it is exaggerated. Anything which impairs the integrity of the nervous arc will prevent the occurrence of the reflex. Diseases or injury of—(1) the sensory nerve fibres, conveying the impression from the surface to the centre; (2) of the nerve centre (lumbar portion of spinal cord); (3) of the motor nerve, which conveys the impression from the centre to the muscle, by causing an arrest of the reflex, will prevent the phenomenon. Practically, the arrest generally occurs in the centre (lumbar portion of cord), for disease and injury of the cord are of every-day occurrence, while

disease of the nerve trunks and anterior roots is rare. All lesions of the lumbar portion of the cord will not prevent the phenomenon—that particular portion of the cord through which the reflex travels must be injured or diseased. The author then referred in detail to individual diseases in which the phenomenon is absent. He stated that in the great majority of cases of locomotor ataxy the phenomenon was absent. In that disease the arrest must either take place in the posterior root fibres or in the posterior horns of gray matter. The posterior columns are outside the reflex tract; the lesion of the posterior columns cannot, therefore, cause the arrest. In the great majority of cases of locomotor ataxy the lumbar portion of the spinal cord is diseased, hence the frequency with which the patellar tendon reflex is absent in that affection. Cases in which the patellar tendon reflex is exaggerated were next considered. Increase in the extent of the phenomenon may depend upon—(1) increased excitability of the gray matter of the cord; (2) disease or injury of the cord interfering with the fibres which transmit the inhibitory impressions from the brain. These inhibitory fibres of reflex impulses are supposed to be contained, in part at least, in the lateral columns. Disease or injury of these (the lateral) columns will, therefore, be associated with increased patellar tendon reflex.

Professor GRAINGER STEWART said that he had met with no undoubted case of locomotor ataxia in which the "tendon reflex" was retained, but one or two in which some of the symptoms existed while it was retained. He had not been able as yet to satisfy himself of the value of the loss of tendon reflex as an early symptom. He supposed that its disappearance depended upon lesion of the portion of the spinal cord which was the *centre* for that reflex movement, and that the symptoms might appear early or late according to the distribution of degeneration in the cord. He had, however, met with one or two cases in which full confidence in this symptom would have or might have led into error. In the case of a gentleman, which had been some years ago narrated to the Society as an example of malarious paraplegia (see *Ed. Med. Journ.* 1876), a relapse had occurred during the last summer, and some symptoms resembling those of locomotor ataxia had been developed. The patellar tendon reflex was found completely absent in both legs, but in the course of a few weeks improvement set in, and the tendon reflex was restored. In this case adherence to Westphal's diagnostic rule would have led to a diagnosis of locomotor ataxia. He had seen the same condition also in the case of an Irish lady who had few other symptoms of locomotor ataxia, and absolute loss of the symptom had been observed in a well-marked case of polio myelitis anterior subacuta, which had been carefully demonstrated to the clinical class. As to the second group of cases—those in which the function was increased—he had seen it very marked in cases of secondary degeneration of the cord following upon cerebral lesion, as well as in cases of primary lateral sclerosis. Further, in one well-marked case of spastic paralysis following upon Pott's disease of the vertebræ, he had found it greatly exaggerated. Sometimes the exaggeration led to prolonged exhaustion, when the tendon was repeatedly tapped; and sometimes the traction upon the flexors led to a spasmodic contraction. He agreed with Dr. Bramwell as to the point of origin of the peripheral irritation being in the tendon, and remarked that some parts of the tendon were more sensitive than others.—*Edinburgh Med. Journal*, Sept. 1879.

A Unique Case of Complete Pharyngeal Stricture of Specific Origin.

Dr. JOSEPH MEYERS, Ex-House-Physician to Charity Hospital, New York, reports (*Med. Record*, August 23, 1879), with Prof. Oertel's permission, the following remarkable case which came to his clinic at Munich:—

A man, thirty-three years of age, had a chancre three years ago, followed by eruptions of secondary syphilis, which got well under mercurial treatment. For the past year he had no specific trouble of any kind, and no treatment, until Dec. 25th. He then began to complain of a sore throat, which, with ordinary remedies, got no better, but rapidly worse. On the 10th of January he presented himself to Prof. Oertel at his clinic, when, upon examination, the posterior wall of the pharynx and sides of the pharynx and uvula were inflamed, reddened, and infiltrated; on the uvula beginning ulcerations were noticed, also on the surface of the tonsils. At this time a gargle was ordered, and he was asked to call again in a few days. Prof. Oertel having been called out of town on the 18th of January, the patient did not again present himself till the 15th, when he was brought into the hospital in a dying condition, almost suffocated, with intense dyspnoea, breathing long and wheezing, inspirations 10-12 per minute, pulse almost imperceptible, surface of body cold, face and hands cyanosed, and almost voiceless and speechless. Examination by Professor Nussbaum gave little satisfaction, simply showing an occlusion of the laryngo-pharyngeal space by a stricture, ulceration of posterior pharyngeal wall in a reparative condition, uvula drawn to right pillar of pharynx and there attached; and perforation of soft palate. What condition the larynx was in could not be determined; opening through which he breathed could not be seen. It was supposed that the ulcerative process had destroyed the epiglottis, and closed the upper portion of the larynx. The indication was tracheotomy, which was immediately performed by Professor Nussbaum, with prompt relief to the patient, so that he was able to leave the hospital in a few days, after having been put on mixed treatment. On the 25th of January he again presented himself to Professor Oertel for further treatment. Examination showed an almost complete stricture of the pharynx, extending from the base of the tongue to the sides and posterior wall of the pharynx, a small opening, not even admitting a probe, a little to the left of the centre of the stricture, which formed a sort of lid over the larynx and oesophagus. Through this small opening the patient took food and breathed. Posterior wall of pharynx of an ash-gray colour, presenting an arch-like appearance. No more ulcerations; soft palate perforated and uvula attached to right side of pharynx. Patient wore a tracheal tube; now only had occasional attacks of dyspnoea, with an occasional choking and coughing when he attempted to swallow quickly. He could only take liquid food, but sufficient to sustain him. Opinion of Professor Oertel was same as that of Professor Nussbaum, that epiglottis was destroyed and upper portion of larynx was closed by the stricture. Condition of vocal cords not known; how larynx closed during deglutition—for food and air passed through the same small opening—was not known. I thought, and Professor Oertel agreed with me, that during the act of deglutition the base was lifted and drawn backward in such a way as to approach post-pharyngeal wall, bringing the small aperture over the oesophagus, at the same time closing the larynx, the closure being aided by the aryteno-epiglottidean folds, which, although they could not be seen, were supposed present, and cases of complete destruction of the epiglottis, reported by Bruns, Türk, etc. Its function was known to be replaced by those folds, and in my opinion aided by the tongue (base) approaching the pharyngeal wall. Professor Oertel proposed to operate; to dilate the opening with a knife. Sounds were passed every other day to get the patient used to an instrument, till February 10th, when the first operation was performed. An incision was made forward toward the tongue; bleeding was slight; he was ordered to gargle with cold water. At this time it was noticed that he could gargle much easier. When he was asked if it pained him, he said "only a little" so distinct that everybody present understood him, he having been almost voiceless and en-

tirely speechless. This operation was followed by two more on the 13th and 18th of February, two lateral incisions then having been made; opening would then admit a finger. Examination after second operation showed, to the astonishment of all present, that the larynx was perfectly intact, epiglottis was entire, vocal cords were normal. He could now breathe without the tracheal tube, deglutition was no more interfered with, and the patient rejoiced in the fact that he was again able to drink lager beer.

The principal points of interest in this case are the completeness of the stricture, its seat, the rapidity of the ulcerative process, the rapidity of the reparative process at the time without specific treatment, and the larynx being perfectly intact.

Etiology of Paralysis of the Crico-Arytenoid Posterior Muscles.

OTT contributes (*Prag. Med. Wochensch.*, No. 15, 1879) an interesting case of paralysis of the posterior crico-arytenoid muscles, which was due to pressure of the posterior crico-arytenoid nerves. A man, aged fifty-seven, had swallowed a large piece of meat, which had stuck in his throat for twenty-four hours, and resisted all his attempts to dislodge it. He had no pain, only slight dyspnoea, and was unable to swallow even a drop of water. The next day he consulted a physician, who pushed down the piece of meat with a sound. The patient felt better directly, could breathe more freely, and was able to swallow. This state of things, however, did not last long; he again began to suffer from difficulty in breathing and swallowing, and was obliged to take only liquid food. The voice had remained unaltered; but the patient was obliged to speak in short abrupt sentences, from want of air. When examined by the writer, it was found that the false vocal cords were slightly swelled, and red; there was a space of four millimetres between the arytenoid cartilages. The rima glottidis was partly covered by the vocal cords during inspiration and expiration; only an irregular triangular opening could be seen at its posterior end. The left vocal cord was wider than the right, and did not move at all, while the right moved sluggishly. During inspiration, the vocal cords were approximated. The arytenoid cartilages did not move either during respiration or phonation. The mucous membrane of the incisura inter-arytenoidea was swelled and pale, and the color of the vocal cords a dingy yellow. The treatment consisted at first in faradization of the larynx, but it afforded no relief to the patient. The dyspnoea increased, and became most severe even when the patient was perfectly quiet. It was noticed that the rima glottidis had become much narrower, the left vocal cord having advanced to the middle of the fissure; the right arytenoid cartilage was partly hidden by the left. As the patient could only swallow with difficulty, it was necessary to feed him through the tube. He lost his appetite, and was very much wasted, and reduced in strength. At last the dyspnoea became so intense that tracheotomy had to be performed, to save the man's life. Immediately after the operation, the patient was able to swallow without any trouble, and continued to do so henceforth. The larynx presented the same changes as before the operation. The patient had still great difficulty in breathing; the thorax was immovable during respiration, and the intercostal spaces were drawn in. The vocal cords were immovable, and during phonation a space of about three millimetres remained open in the back part of the fissure. For this reason, the patient had to be dismissed with the canula in his throat, to prevent asphyxia. The author attributes the paralysis of the muscles which open the glottis to the pressure which the large piece of meat, that was firmly wedged in the pharynx during twenty-four hours, must have exercised on the crico-arytenoid posterior muscles and their nerves. His assertion is based upon the well-known fact that the conducting

function of a nerve is entirely destroyed by pressure. Thus, in the present case, the nerve having lost all control over the muscle it governs, the latter became paralyzed, and gave rise to the phenomena we have described. The difficulty in swallowing, which increased whenever the dyspnoea became worse, decreased when the sound was introduced, and finally disappeared after tracheotomy, can only be explained by assuming the existence of a spasmodic stricture of the oesophagus.—*New York Med. Journal*, Oct. 1879.

A Rare Form of Diphtheritic Paralysis.

Dr. DAHLERUP describes (*Ugeskrift for Læger*, 3d series, vol. xxvi) the case of a boy aged 12, who, ten or twelve days after recovering from an attack of diphtheritic angina, was seized with difficulty of breathing, which increased to severe dyspnoea at the end of fourteen days. On examination, there was found to be orthopnoea, cyanosis, oedema of the feet, and moderate oedema of the lungs. The heart-beat was somewhat quickened, irregular, and very weak; the area of cardiac dulness was not increased. The heart-sounds were distinct. The pulse was rather feeble. The urine contained a large quantity of albumen. Under the use of digitalis and stimulants, there was slight improvement at the end of a week; the dyspnoea then increased, as did also the oedema of the extremities and lungs; and the patient became collapsed, and died. The temperature at no time of this illness rose above 98.6° Fahr. Dr. Dahlerup believes the case to have been one of progressive diphtheritic paralysis of the heart.—*British Medical Journal*, Sept. 27, 1879.

Intestinal Obstruction successfully treated by Puncture of the Small Intestine.

Dr. W. H. BROADBENT, Physician to St. Mary's Hospital, reports (*British Med. Journal*, Sept. 27, 1879), the following interesting case:—

In February, 1877, I was called by Mr. Rayner to a maiden lady, aged about 60, who presented the usual symptoms of intestinal obstruction—severe tormina, vomiting, and great distension of the abdomen. The seat of the obstruction was made out to be in the neighbourhood of the cæcum, the transverse and descending colon being empty. Opium and belladonna were given, food withheld, and enemata administered; and, the pain and vomiting being quieted, an examination of the rectum was made at a subsequent consultation, when a solid mass was felt pressing down into the pelvis on the right side. It was pushed up as far as possible, and very shortly flatus and feces began to pass. It was ascertained, on inquiry after the examination, that about nine or ten years previously, the patient had been tapped, and that the contents of a suppurating ovarian cyst had been withdrawn. The shrivelled cyst had formed a tumour in the right inguinal region, where she had been accustomed to feel it, and where it was found after the attack. The obstruction was attributed to displacement of this tumour downwards, giving rise either to pressure upon the bowel, or more probably to dragging by adhesion.

There was a slight return of obstruction in March, and again in June, brought on by imprudent exertion; in the autumn, she had a more severe and prolonged attack while at the seaside.

On May 14, 1878, I was again called to this lady by Mr. Rayner. She had then been suffering from complete obstruction of the bowel for several days, which persisted in spite of the treatment which had on the several previous occasions been successful. The tumour formed by the old cyst could now be indistinctly felt in the right inguinal region notwithstanding the great distension of the abdomen, and was only just reached by the rectum; the rectum was held open

by adhesions, so that on passing the sphincter ani the finger moved freely in all directions in a large cavity. A vaginal examination was impracticable, on account of the contracted state of this passage.

The treatment was continued: in addition to the opium (gr. j) and belladonna (gr. $\frac{1}{2}$) pill taken every three or four hours, and poultices with opium and belladonna over the abdomen, morphia was injected hypodermically. No food was given by the mouth, but enemata of beef-tea and brandy were administered every three or four hours, while once a day a copious enema of water or gruel was employed, for the double purpose of contributing to the relief of the obstruction and of washing out the rectum and removing particles deposited from the beef-tea, these being liable to become acid and set up irritation which causes the nutrient injections to be expelled.

No good result was obtained; and at length, after nearly a fortnight of anxious watching, and when complete obstruction had lasted three weeks, the intestine was punctured by a long aspirator-needle. The aspirator was used at first, but was found to be unnecessary; an enormous amount of gas gradually escaped, the tension of the abdominal walls, which had seemed ready to split, was relieved, and two days later (May 29th) feces and flatus began to pass naturally.

Another attack came on in January, 1879, and when I saw the patient with Mr. Bridges on January 4th, complete obstruction had existed for several days. The attempt was made to procure relief by enemata, hypodermic injections of morphia, external applications of opium and belladonna on poultices, and in effect by treatment similar to that already described, but in vain. Ice also was applied over the right iliac region; it gave relief from suffering, but did not set the bowels free. The patient begged from the first that the gas might be drawn off, as in the previous attack; and, as there was no improvement, this was done, without waiting for the same length of time, on January 8th. The distension was removed, and during the following night a copious evacuation from the bowels put an end to the danger.

At this time, indistinct fluid vibration was detected in the right inguinal region instead of the solid-feeling tumour, and, on the subsidence of the abdominal distension, it was well marked. It was accordingly determined that on any recurrence of obstruction an attempt should be made to remove the cause by aspiration of the cyst, which was evidently refilling after an unusually long interval. The recurrence happened in May of this year, and I was called to the patient on the 7th by Mr. Gawith, to whose care she had been transferred. She had been suffering from bronchitis, and still had a severe cough. There were all the indications of obstruction; the signs of fluid in the right inguinal region were more distinct; and, on examination *per rectum*, an elastic tumour could be felt high in the pelvis, from the surface of which projected two or three small secondary cysts. On the 9th, a moderate sized aspirator-needle was plunged into the cyst, and about six pints of dark brown fluid were drawn off without any unfavourable results. At first, it seemed as if the desired effect was about to follow: a little flatus was said to escape when the enemata were used, and a small quantity of fecal matter was felt in the rectum on examination. This promise was, however, illusory, and, as the distress increased, the intestine was once more punctured on May 20th. A considerable amount of gas had escaped; and the extreme distension was relieved, though not to the degree required, when, in the act of coughing, the coil in which the needle was planted was suddenly displaced to the left and slightly downwards, carrying with it the needle, which now lay flat on the abdominal wall. It was immediately withdrawn; but this was followed by a free escape of gas, which first issued with a hissing sound from the aperture in the skin, but soon rushed into the subcutaneous cellular tissue, and produced

emphysema, which rapidly spread. This was circumscribed by pressure made by the hands, which also had the effect of directing any gas which had escaped into the peritoneal cavity to the internal opening in the abdominal wall. Another needle was at once plunged into a neighbouring coil of intestine, to take off pressure and prevent gas from passing into the coil from which it had escaped after withdrawal of the needle. Finally, when all issue of gas from the intestine appeared to have ceased, the subcutaneous emphysema was removed by squeezing towards and out of a puncture made by a lancet.

Strange to say, no bad effects of any kind followed; but the pressure had not been sufficiently reduced to permit of the removal of the obstruction. The distension soon became as great as ever; and, with considerable hesitation, the operation was repeated four days later. More gas escaped; the abdomen became soft and yielding, almost flaccid; when exactly the same accident occurred again: the patient coughed and displaced the intestine, the needle had to be hastily withdrawn, it was followed, as before, by gas which escaped from the puncture and rapidly diffused itself under the skin, where its progress could be both seen and felt. Similar precautions were taken, and happily no inflammation followed, but, on the contrary, a copious stool, and the bowels have since continued to act.

Since the above was written the patient has again suffered from obstruction, which was not relieved till the intestine had been punctured. This was done on August 1st with the same fortunate result as before.

I have recommended and practised puncture of the intestine several times in intestinal obstruction, and have never seen injurious effects. The precautions which I consider necessary are the following:—

1. To secure, if possible, absolute freedom from peristaltic action of the bowel. This is done by giving an extra dose of opium by the mouth, or a considerable hypodermic injection of morphia, or both, three or four hours beforehand. No food of any kind should have been taken for some time.

2. To select, if possible, a coil of intestine which shall contain only gas, and not liquid. This will be in the jejunum, and is to be found above the umbilicus rather than below it. An indispensable condition is, that scarcely any food shall have been taken during the entire attack.

3. To pierce the coil exactly at its most convex part. The abdomen should be carefully watched for some time at every visit, and especially before the operation. In some cases, where the walls are thin, the outlines of various coils may be traced even in repose; but this will be more distinct when peristalsis is provoked by pressure, friction, or manipulation of one kind or another; it will be seen also which coils shift and which keep the same position when contracting. The spot chosen for the puncture should be as nearly as possible over the centre of a coil which does not roll about, and by preference in the linea alba. If the needle happen to hit the line of contact between two coils, it may tear both.

4. To exercise great care and patience during the escape of the gas. The needle should be held lightly, but rather firmly, perpendicular to the abdominal wall, and should not be allowed to follow too readily any movement of the intestine. Under the circumstances of obstruction, the respiratory movements are not great. As the gas escapes from the coil selected for puncture, it will collapse under pressure from neighbouring coils, and the flow through the needle will cease; very soon, however, the air in the intestine will distribute itself and enter the empty portion, when it will again escape. This may be aided by gentle manipulation and pressure; but they should not be hastily resorted to: nothing is gained by hurry. Should the tube get blocked, aspiration may free it; but it is safer to drive a little air through the tube into the bowel than to exert powerful suction, which may draw the mucous membrane against the sharp needle.

It is better not to put on a bandage after the operation.

Puncture of the intestine can relieve obstruction only very rarely, and under exceptional circumstances. In the case related, in which there was reason to suppose that the cause of obstruction was external to the bowel, and was due to pressure by the tumour, or by adhesion, or to displacement and dragging of a portion of intestine, it was hoped that removal of distension might permit the parts to return to their previous condition and situation; and other conditions may be imagined in which this might occur, but it could have no effect on a stricture or intussusception. My own experience, however, would lead me to recommend puncture as a palliative; and though I have no experience to guide me, I should think it might be a useful preliminary to inflation, manipulation, suspension head downwards, or other procedures in intussusception, twisting, or imprisonment of the bowel by adhesions.

Anthrax Intestinalis.

At a meeting of the German Medical Society in St. Petersburg (*St. Petersburg. Med. Wochens.*, No. 27), the following case was reported by Dr. KADE: A girl aged 17, a seamstress, presented the following symptoms when received into the hospital: Her skin was livid; she was very restless and threw herself about; the heart-sounds were very loud; the throat and lower jaw were œdematous; the glands could be felt only with difficulty both here and in the groin; the abdomen was meteoric and painful; the bladder empty. On being spoken to in a loud voice, she answered slowly and sensibly. There was an excoriated patch on her forehead, and a similar one on the inner condyle of the right femur, where the patient said she had had a pustule before. She had been taken ill three days ago with dysphagia, for which she had taken a dose of castor-oil. On the second and third days, she had felt comparatively well. On entering the hospital, she vomited once, and died three hours later. At the *post-mortem* examination the subcutaneous cellular tissue in the abdominal walls was found to be hemorrhagically infiltrated; the abdominal cavity contained a serous liquid. The mesenteric and inguinal glands also presented a bloody infiltration. The whole of the intestinal tract was injected. In the duodenum several semiglobular swellings were found, which became fewer in number in the small intestine, and disappeared in the large intestine. The spleen was soft, little enlarged; the liver was not enlarged, and was soft. Punctiform extravasations were found in the pelvis of one of the kidneys. Several bloody pustules, partly degenerated, were found on the ary-epiglottic ligaments. In the apex of the right lung was a fresh infarct of the size of a walnut. The longitudinal sinus of the dura mater was filled with fluid blood. Minute extravasations of blood were on the external lamella of the sinus. The blood itself contained numerous bacteria.—*British Medical Journal*, Sept. 27, 1879.

Heroic Treatment of Tapeworm.

Dr. CARL BETTELHEIM (Volkmann's *Sammlung Klinische Vorträge*, No. 166), after carefully summing up our present knowledge of the natural history of the various species of tapeworm, offers some remarks on a speedy method of removing tæniæ from the intestine, which are well worthy of attention. He asserts that by the plan he adopts he can expel the worm, head and all, in from three-quarters of an hour to less than four hours and a half. The "cure" consists first in an absolute preliminary fast of from eighteen to twenty-four hours' duration, during which the patient is allowed nothing but water, and has his bowels cleared out with three or four tablespoonful doses of castor oil. During

this time the druggist is preparing the decoction of pomegranate bark—the anthelmintic which Dr. Bettelheim prefers, and which takes thirty hours to make properly. The following is the formula for it: *R. Granati rad. corticis*, 300.0–400.0 grammes: *macera per 24 horas*. *Deinde coque c. aqua dest.* 500.0–600.0 *ad remanentiam* 200.0–300.0. Such a decoction should be a clear, dark, almost black-brown liquid. The secret of success in the second stage of the cure is to introduce this jorum into the patient's stomach, if possible, in a single dose. This Dr. Bettelheim effects by passing a flexible tube down his oesophagus, and pouring the fluid through it with a glass funnel. Patients generally submit to the tube when told that they must otherwise drink off the medicine at one draught. With some sensitive persons, however, even under its use it may be necessary to divide the dose into three or four portions, and to give them at short intervals of from a quarter of an hour to an hour. The greatest obstacle to this method is the vomiting so often caused by the pomegranate bark, but if the medicine can be kept down for half an hour or an hour the cure generally succeeds in spite of it. The patient should remain absolutely still after his dose, as the best chance of avoiding sickness. Drugs are almost useless to prevent it. Citric acid and ice are the most effectual remedies. If the sickness immediately follows the exhibition of the decoction, as it does sometimes, the extract of male fern must be tried at once, in moderate doses, every hour or half-hour. We may here add a word or two drawn from Dr. Bettelheim's experience, as to the effect of these tapeworm "cures" on the patient, and as to the contra-indications to them. Vomiting has been already mentioned as a troublesome sequela, and severe diarrhoea, faintness, cramps in the calves and forearms, may be caused by the medicine; or merely a feeling of weariness, sleepiness, numbness, or oppression of the chest may be experienced. In all cases, however, the patients have completely recovered either by the evening of the same day, or at any rate by the next morning. A plan of treatment like the above is contra-indicated by the concomitant presence of ulcer of the stomach, or of any other severe gastric derangement not dependent on the tapeworm itself, and by severe illness, and all febrile affections. Wet-nurses, convalescents, and menstruating or pregnant women should not be subjected to a "cure" unless, as rarely happens, the worm is a great annoyance to them; nor should very old people undergo it, nor children who have been already treated once unsuccessfully and have proved very refractory. No "cure" should ever be begun unless the medical attendant has had definite proof that tapeworm segments have been passed by his patients within a day or two. He should preside over the cure himself, and make absolutely certain of the presence of the worm's head in the dejections. This, by following Bettelheim's method, involves little loss of time. The worm often comes away with the first motion, about an hour and a half after injection of the decoction. If the bowels are not moved as soon as that, a dose of castor oil may be given. Should the first "cure" fail, it may be repeated in two or three days' time, but this is rarely necessary.—*Med. Times and Gaz.*, Oct. 4, 1879.

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Death caused by an Ascaris Lumbricoides in the Upper Air-Passages.

Dr. FURST has published, in the *Wiener Med. Wochenschrift* for 1879, a summary of twenty-four cases of immigration of ascarides into the upper air-passages, from which we quote the following case: A girl, aged 4, had been received into Professor Billroth's hospital for congenital ectopy of the bladder. One evening, she suddenly had an attack of suffocation. Thinking that she must have aspirated some foreign body, the author explored the larynx without any result, and then performed tracheotomy, as she had suddenly ceased to breathe. As no canula was at hand, a male catheter was introduced into the wound, but met with

some obstacle. It was drawn out and then pushed in again, when it went in quite smoothly. Artificial respiration was then resorted to, but the child died. Two hours after death, a female live ascaris, about nine-tenths of an inch long, was seen hanging out of the nostril. It is evident that the catheter had been prevented from penetrating into the trachea by the worm, which probably then changed its position and wandered upwards. The *post-mortem* examination revealed a male *Ascaris lumbricoides*, nearly half an inch long, in the jejunum. The author gives the following clinical sketch of the *modus operandi* of the immigration of ascarides into the air-passages. As far as concerns the etiology, vomiting, fever (as a high temperature always quickens considerably the movements of the ascarides), purgatives, abstinence from food—may all be looked upon as favouring the immigration into the larynx. Children are more liable to it than adults. The symptoms are not always the same; sometimes the worm sticks in the glottis, and such cases naturally invariably end fatally within a very short time. At other times, the worm passes the rima glottidis, when the patient dies of bronchitis in the course of a few days. The majority of the cases that have hitherto come under observation belong to the first class. The patients become aphonic and asphyctic; occasionally these symptoms are preceded by hoarseness during a few moments. Then comes a stage of great excitement, anxiety, and profuse sweating, which is followed by loss of consciousness. In cases of the second class, the patients feel much better after the worm has passed through the rima glottidis; but they do not recover their voice, and complain of pain in the anterior part of the throat. The diagnosis is very difficult and uncertain. In young children, the fits of suffocation are often completely masked by convulsions. If laryngitis, croup, diphtheria, spasm and oedema of the glottis, perforation of cold abscesses, or affections of the lungs may be with safety excluded, one is justified in supposing that a foreign body has penetrated into the pharynx or larynx. Then if it can be proved with certainty that no foreign body has been aspirated, and, moreover, if the patients are troubled with ascarides, it may be concluded that the foreign body in the trachea is an ascaris. This supposition will be rendered still more plausible if, after the worm has passed beyond the glottis, the asphyxia decrease and the trachea becomes painful. If it be not possible to extract the worm, either with the hand or by emetics and expectorants, tracheotomy must be performed. It has been resorted to in three cases out of the twenty-five, but each time with fatal issue. At the necropsy, the worm is generally found in the place where it evidently resided, judging by the symptoms during the patient's life. These places generally bear marks of inflammation, which have been produced either by the mere presence of the foreign body, or by its movements, or else by its peculiar irritating properties. The mucous membrane is red and injected, covered with bloody froth, and in some places eroded. Pneumonia of a circumscribed portion of the lung is sometimes caused by the protracted presence of the worm in one of the bronchi. The inflammatory symptoms are manifested principally in the arytenoid cartilages, as they are much affected by the migrations of this worm from the oesophagus. The usual symptoms of death by asphyxia are also always met with, as well as a certain number of ascarides in the intestines.—*British Medical Journal*, Sept. 27, 1879.

Bright's Disease.

At the late International Medical Congress at Amsterdam the following note was presented by Professor SEMMOLA. It comprised a *résumé* of the communication made by Dr. Semmola to the International Medical Congress at Brussels, on different kinds of albuminuria, which was reported in the *Gaz. Méd. de Paris*,

1875; also a *résumé* of further researches made by Professor Semmola, and communicated to the present International Congress of Amsterdam. He said:—

1. My first researches were conducted as far back as 1850. I think that I was the first to show the classic influence of alimentation and diet on the quantity of urine which is secreted in Bright's disease. (See Jaccoud's work, *Manual of Internal Pathology*, Paris, 1873, vol. ii. p. 685.)

2. This influence of diet on the increase or decrease of albumen in the urine, according to the greater or less amount of nitrogenous elements in the food, was the starting-point of all my researches. It led me to conclude that it is absolutely necessary to direct our attention not only to the renal lesions, but also to general nutritive disturbances in which the albuminoid bodies are either not at all, or only imperfectly, assimilated and consumed.

3. This idea, which I have always endeavoured to develop concerning the etiology of Bright's disease, has, to my mind, been confirmed by another classical fact which has hitherto remained completely misunderstood. I mean the considerable and progressive decrease in the quantity of urea which is formed in the organism from the first stages of chronic Bright's disease. (See note at the end.)

4. I have always insisted on this classical and fundamental point, and have repeatedly made communications on the subject to the Académie de Médecine of Paris and to that of Naples. I especially insisted on this point in Paris (1867) and in Brussels (1875), and have convinced myself by the study of three hundred clinical cases that the decrease of the urea from the first stages of Bright's disease is owing to a defective oxidation of the albuminoid matter.

I find that in all books authors speak of the defective excretion of urea; but I have never yet been able to discover anything about the defective formation, which I am sure is a principal and fundamental fact: a characteristic phenomenon of Bright's disease.

5. It is caused by the total or partial absence of the cutaneous functions. In consequence of this suppression of the respiratory functions of the skin, two chemical disturbances arise, which are closely united from a biological point of view—viz., the alteration and inassimilability of the albuminoid substances, and defective combustion, i. e., a decrease in the formation of urea. I leave it to experimental physiology to elucidate the part which the cutaneous functions play in the assimilation and combustion of albuminoid matter. I shall merely restrict myself to pointing out the intimate connection between the two which has been revealed by the pathological condition; and I foresee that it will lead to the solution of a problem which is of great importance both for physiology and pathology. As I have said before, this is a capital and fundamental fact, that can be repeated experimentally by varnishing to a certain extent the skin of a dog. It proves that the real chronic Bright's disease is a general affection, a defect in nutrition, in which the changes that take place in the kidneys (beginning with hyperæmia and ending with cirrhosis and atrophy) do not constitute the primary cause of the principal symptoms of the disease. Physiology fails to explain by what mechanism a morbid process, which has been confined to the kidneys from its very beginning—that is to say, at an epoch when they still fulfil their duty as purifying apparatus—could have had any effect on the production of urea, and thus act on the whole system. I beg my honourable colleagues to direct their attention to this point of renal pathology. It is a most important point, that has hitherto remained unobserved, because it can only be studied in the first stages of the disease, which only in rare cases come under notice in hospitals and clinics.

In all other cases of albuminuria that are not instances of true Bright's albuminuria, this decrease in the production of urea which runs parallel with the in-

crease of albumen is not found. Consequently, it is of the highest importance to distinguish carefully between these different kinds of albuminuria so as to avoid a mistake that is often made and is dangerous, both clinically and therapeutically. The cause, the mechanism, the evolution, in short the *cachet* of the general chemical process of nutrition, combined with the decrease in the production of urea, and last but not least, the pathological alterations which take place in both kidneys, form a harmonious *tout ensemble*, which is always the same and constitutes the true type of Bright's disease properly so called.

6. The decrease in the production of urea which takes place in other cases of albuminuria is not in any way connected with albuminous filtration. It may exist in some cases, but varies very much according to the particular disease that has produced the albuminuria, and at the same time created disturbances in the general process of nutrition (heart disease, etc.). Here, however, the decrease in the production of urea is not connected with the phenomena of albuminuria; its progress takes place in an entirely different way, and it is not till the last stage of those various affections, *i. e.*, when the kidneys have become thoroughly diseased (amyloid degeneration, etc.), that a very considerable decrease takes place in the secretion of urea in the urine for want of filtration. It results from the aforesaid, that this decrease is a mechanical effect which gives rise to the accumulation of urea in the blood with all its fatal consequences.

7. In Bright's disease, properly so called, there are two causes for the decrease of urea in the urine. In the first stage of the disease the decrease is caused by incomplete combustion, a defective nutrition, combined with changes in the albuminoid, which is gradually developed, owing to the suppression of the cutaneous functions. Later on, that is to say, when the affection of the kidneys has reached a further stage, a second decrease of the urea takes place in the urine owing to defective secretion.

8. The tendency to exaggerate the anatomical point of view of the affection has led to neglect of the chemical and more universal aspect of it, thereby producing a conclusion which is perfectly paradoxical so far as regards scientific pathology, *i. e.*, "clinical unity" and "anatomical plurality" (large white kidney, amyloid degeneration, etc.). It is impossible to perceive in what way a general alteration, which shows itself with the same symptoms and consequently must spring from the same causes, can bring forth different anatomical results. The final difference in the lesion shows that there has been a difference in the nature of the preceding morbid processes. By combining all the conditions under which the symptoms constituting the clinical aspect can exist, the successive evolution of the process, and the constant relation between it and its special causes, we shall succeed in reconstructing the edifice of true Bright's disease, and in distinguishing it as a peculiar pathological species which differs from other species of albuminuria.

9. The passage of albumen into the urine may take place through the three physiological factors that preside over the renal functions; *viz.*, *a.* chemical constitution of the blood; *b.* degree of pressure; *c.* condition of the histological elements of the filtering apparatus.

10. Consequently, there are three classes of albuminuria, *viz.*: *a.* dyscrasic albuminuria (caused by excess of presence of the albuminoid constituents of the blood or by the alterations occurring in them); *b.* mechanical albuminuria; *c.* albuminuria produced by irritation, *i. e.*, by some local histological cause existing in the kidney. This species is caused by the irritating effect of all the agents that penetrate into the kidney, either from without or that are formed in the organism.

Diagram of Classes of Albuminuria.

Variety of Albuminuria.	Causes.	Condition of Kidney.	Urea in the Blood and in the Urine.
a. Chemical conditions of the blood. Dyscrasic albuminuria.	Presence in the blood of an excess of albumen, owing to the diet.	Normal kidney.	The maximum of urea, sulphates, and phosphates contained in the urine varies according to the individual.
	An excess of the albuminoid constituents of the blood, owing to defective combustion.	Irritative hyperæmia, which is more or less intense according to the organ or apparatus whose functions are affected: the cutaneous surface, lung-disease, etc.	Progressive decrease of the urea in the urine, though it is not accumulated in the blood. Want of production.
	A change in the chemical constitution of the albuminoid bodies which circulate in the blood. This change renders them incapable of being assimilated, etc. (cachexia).	Fatty degeneration. Amyloid degeneration.	<i>Idem</i> owing to the gravity of the case which causes cachexia.
b. Degree of pressure of the current of the blood. Mechanical albuminuria.	Various neuropathic affections having a direct or indirect effect on the vaso-motor system.	More or less transitory renal stasis.	Amount of urea almost normal, within the limits of physiological oscillations.
	Pregnancy: in short, every kind of pressure exercised on the inferior vena cava or the renal veins.	<i>Idem</i> , but occasionally the stasis becomes permanent, owing to the general conditions of the organism, or to organic causes that produce the lesion.	Amount of urea not depending on the pregnancy or the organic causes that produce pressure.
	Cardiac diseases that have not yet reached the stage of compensation.	Persistent stasis, cyanosed kidney, cardiac kidney.	Amount of urea decreases in proportion as the affection of the heart increases.
c. Histological alterations take place in the kidneys. Irritative albuminuria.	All the irritative processes in the kidneys, from their first stage up to complete nephritis.	All the anatomical consequences of inflammation beginning at the first stage, and the degeneration of the different kinds of epithelium up to renal scleroses and atrophy.	Amount of urea is normal or slightly increased, owing to the fever (acute stage).
	The albuminous filtration is more or less considerable in proportion to the rôle and effect that the inflamed elements may have in the mechanism of the urinary filtration.	This depends on the special histological seat of the inflammation and its particular course.	Decrease in the production of urea, though there is no increase in the blood, owing to general disturbances in the combustion.
			Decrease in the production of urea owing to defective filtration, and consequently accumulation in the blood.

These three classes of albuminuria are closely related to different anatomical conditions of the kidney. If each one of these three conditions have been only transitory, the anatomical structure of the kidney may remain in its normal condition and no albuminous filtration will take place (as in series *a*). In other cases it may be modified by a transitory morbid process, and then regain its previous normal condition. Finally, if the pathological condition that has given rise to albuminuria be persistent, the anatomical structure of the kidney undergoes a gradual change, and causes a particular defined lesion which differs according to the cause, and is in relation with each of the three factors which have modified the renal function so as to determine the filtration of the albumen. This will be more clearly shown by reference to the above diagram.

If we look at the clinical history of Bright's disease properly so called, with a view to classifying it among one of the preceding groups, we find that it cannot be placed exclusively under either of these heads. It is a mixed albuminuria, i. e., its complicated etiological mechanism contains all the other three mechanisms of the other classes of albuminuria, and it forms a pathological specialty that has nothing whatever to do with the other classes of this affection. Analyzed in this way, Bright's disease reveals a constant evolution and a harmonious relation between the nature of the cause, the etiological mechanism, the chemical and anatomical alterations, and the clinical form. The *modus operandi* is as follows: *a*. The gradual effect of moist cold on the skin. The gradual action of moist cold is the only cause of true Bright's disease. Other causes produce albuminuria and lesions that differ from the true type. *b*. The respiratory functions of the skin decrease gradually, till they cease completely. Their absence gives rise to the following disturbances, which appear at the same time, and are closely connected with each other: 1. Cutaneous ischæmia; 2. Accumulation in the blood of matter which ought to have been excreted by the skin; 3. Alteration of the albuminoid bodies, so that those which originate from the peptones are not assimilated; 4. Decrease in the combustion of the albuminoid bodies, and consequently in the production of urea.

If it were possible to arrest for a moment the harmonic solidarity of all the organs and apparatus, the kidneys might be excluded, as it were, for a certain time, during which first period they would be in no way connected with the true pathology of Bright's disease. But a similar abstraction can only be conceived in order to show that the anatomical lesions of the kidney are only a secondary process, and do not constitute the initial lesion of Bright's disease.

The four aforesaid causes produce the following effects upon the kidneys:—

1. Renal hyperæmia. (Increase of pressure.)
2. Irritating effect of the said hyperæmia, owing to the accumulation in the blood of substances that ought to have been excreted by the skin, and its dyscrasic condition in consequence. (Inflammatory effects.)
3. Elimination of the albumen through the kidneys (the depuratory organs *par excellence*), because, the constitution of the albumen being altered, owing to paralysis of the respiratory functions of the skin, it has become an useless substance, and may almost be regarded as a foreign body in the organism.
4. The progressive decrease of the urea in the urine is the result of the decrease in its production.

Thus we have a twofold series of effects, that are closely connected with and complement each other, i. e., 1. The general nutritive lesions, with all their characteristic consequences; 2. The anatomical development of the inflammatory process of both kidneys, from the first stage to the last. These two series of disturbances constitute Bright's disease, or Bright's albuminuria.

The differences which exist in the clinical form of other albuminurias, and the

combination of various final anatomical lesions existing in the same kidneys, depend entirely on special etiological causes (alcoholism, gout, syphilis, etc.), which modify the general condition of the individual, and consequently add to the renal lesions that are peculiar to the inflammatory chronic process other elements that vary according to either the nature of the alteration, or to their seat being more or less confined to one or the other of the different histological elements which constitute the kidneys. It follows that true Bright's disease has nothing to do either anatomically or clinically with any of the other species of albuminuria, whatever may be their origin. I also believe that it is not at all true, though affirmed by several authors, that Bright's disease may be caused by alcoholism, gout, etc. Whether considered from a scientific or a practical point of view, this appears false; because it is a well-known clinical fact that there is such a thing as albuminuria caused by gout, alcohol, etc. And each one of these affections corresponds to general nutritive alterations, which differ not only according to their etiology, but also are represented anatomically by considerable alterations in the kidneys, which in some cases are due to nephritis. These alterations, however, vary very much, so far as regards the affected spots; sometimes they are restricted to one kidney alone (embolic nephritis, pyelitis, stone, syphilis, etc.). If both kidneys be affected, we always find that there exists a secondary disease, in which predominates an inflammatory condition either of the elements of the parenchyma or of the connective tissue, and which is either due to the irritating effect of a foreign body that passes through the kidneys (alcohol, resinous matter, cantharides, etc.), or to the presence of a deposit of urea that irritates and inflames the neighbouring tissues. In cases of degeneration (fatty, amyloid, etc.), the kidneys are as much affected as many other organs (liver, spleen, etc.); and it would be absurd to regard these cases as belonging to Bright's disease. I repeat it again and again, I am justified by my researches in concluding that true Bright's disease is a constant clinical type, a pathological specialty the characteristics of which *intra vitam* are albuminuria, absence of urea, cachexia, and a peculiar anasarca. The anatomical changes consist in an inflammatory process of both kidneys, which progresses very slowly, and extends gradually over the whole of the organ. These changes, however, are not quite the same for all the elements of the kidneys, but differ according to the physiological part that each element plays in the discharge of the renal function. All the exclusively histological localizations that have been held up as special forms of Bright's disease do not exist in nature in an isolated condition. They may only predominate in some elements that are more affected than others. That this renal affection is always a bilateral one I have already mentioned. I believe that this constant bilaterality constitutes, from an anatomical point of view, the peculiar characteristic or the final control of true Bright's disease, thereby adding a new proof to what I have said, viz., that there exists a profound universal deterioration of the system, which precedes the outbreak of the disease, and must necessarily act on both kidneys at the same time, though with characteristic slowness.

According to my opinion, this constant renal alteration ought alone to be called "Bright's kidney," for the following reasons, viz.: It is caused by the effect of moist cold; the dyscrasia following it is of a particular nature; and finally it develops gradually from a simply hyperæmic state till it becomes atrophic. It may occasionally reveal somewhat different symptoms; but this only takes place when another cause (alcoholism, gout, etc.) is superadded to the action of moist cold. Thus we have a series of complicated effects, both in the clinical form *intra vitam*, and in the nature of the alterations which are found in the kidneys and other organs after death.

POSTSCRIPT.—It is true, that several authors acknowledge that there is a more or less considerable decrease in the production of urea from the onset of the disease; but they ascribe it to the anæmic condition of the patient. Now, this decrease in the section of urea dates from the first time that albumen appeared in the urine, that is, from an epoch when it is impossible to admit that an anæmic condition has been induced by the want of albumen in the blood.

I repeat it, and it is a most important fact, the decrease in the combustion of the albuminoid bodies is caused by an alteration which takes place in them after the suppression of the cutaneous respiration. The decrease of urea and elimination of albumen are two facts which are closely connected with each other from the first moment of the affection.—*British Med. Journal*, Sept. 27, 1879.

Mycosis in Man.

Dr. J. ISRAEL has published, in Virchow's *Archiv*, Band lxxiv., a recent observation on this affection. The patient, a woman aged 39, had had, ten months previously, a fall, striking her chest against the bed-post. Three months later, she had pains in her limbs and daily repeated attacks of fever, and entered the hospital in a state of great prostration. Her appearance was suggestive of general septic infection. The whole body was covered with marks and scars of old abscesses as well as with fresh ones; there was a particularly large one on the left side of the thorax opening into a fistula, through which large quantities of fetid pus were voided. The pus was of a green colour, and covered with small yellow corpuscles of the size of a pin's head or larger, which could easily be taken out with the point of a needle. When examined under the microscope, these corpuscles were found to consist in the centre of a thick mass of fungi, from which long thread-like appendices issued, branching off in every direction. The space between the latter was filled up with pus corpuscles which had undergone fatty degeneration. There were three different classes of fungi: delicate threads of mycelium, micrococci, and a third form pear-shaped and brilliant. The same constituents were found in the other abscesses. The woman died three weeks after entering the hospital. The necropsy showed that the large abscess in the thorax communicated with a large cavity filled with pus in the left lung. The liver, spleen, intestines, and kidneys, were covered with purulent foci varying in size from a lentil to an apple, and containing the same species of fungi. In the kidneys the convoluted tubes were found in several places to contain embola formed of fungi, though there was as yet no suppuration in their vicinity. There could be no doubt as to the abscesses having been caused directly by the parasites, although it was impossible in this case to find the primary source of infection. The author, however, has offered the following hypothesis: He had noticed before that, in cases of caries of the teeth which had given rise to abscesses in the gums, the pus of the abscesses contained fungi which bore a close resemblance to those which he discovered in this case of pyæmia or septicæmia; this led him to suppose that the patient in question had a carious tooth, whence the fungi might have been aspirated into the lungs, and by some chance into a pneumonic focus which had been caused by the fall, and ultimately have been carried through the system through the medium of the circulation.—*British Medical Journal*, Sept. 27, 1879.

Surgery.

Influence of the Atmosphere on Operations.

Professor TRÉLAT, in a recent clinical lecture, drew attention to some facts which seem to prove that the condition of the atmosphere exercises a certain influence on traumatic lesions. He pointed out that the older surgeons, and even those of a more recent period, always put off operations that were not very urgent till certain seasons of the year. Roux, who operated on a large number of cataracts, always kept the operations for the spring; and this tradition was probably based on observation. All the cases of acute septicæmia observed by M. Trélat occurred in June, in hot and sultry days. One case was that of a very healthy woman in her fourth confinement, all her labours having been remarkably easy. She began to feel ill on the first day, and was worse the second day; on the third day the case was hopeless, and she died on the fourth. At the same time, M. Trélat had been operating upon a man suffering from cataract in both eyes. Everything had gone well, and the operation promised to be a very successful one, but during the night the patient suffered much from the heat, and was very restless; the eye grew worse, and a few days later suppuration set in. Another case was that of a woman in whom he operated for cancer of the breast during June. For the first four days all seemed to go well, but on the night of the fifth day the patient suffered intensely from the sultry weather, and passed a bad night. Next day the sore presented a very bad aspect; the patient became slightly delirious towards night, erysipelas set in, and she died on the eighth day. A patient was suffering from multiple fistula and stricture of the rectum. M. Trélat performed rectotomy by means of the galvano-caustic loop. The patient did not lose a drop of blood, and the operation was done under excellent conditions. Towards night, however, he felt a little restless; during the night a profuse fetid diarrhœa set in; and the temperature in the axilla rose to 102.2°. These symptoms grew worse the following days; and on the fourth day the patient died of acute septicæmia. Three years ago, M. Trélat was called upon to perform perineoraphy on a young woman in whom the perineum had been lacerated during parturition. The operation had, against his will, been put off from April to June. It happened to take place on a very hot day, but everything went on so smoothly that the best hopes were entertained, till at night, when the patient became flushed, restless, and died of septicæmia four days after the operation. M. Trélat particularly insisted on these facts, because, although they all took place in different years, yet they occurred at the same season and under the same atmospherical conditions. He also compared them to the remarkable results at which M. Davaine has recently arrived. He found that a very small quantity of septicæmic blood, when injected under the skin of guinea-pigs, caused death within thirty hours if the operation was performed in summer at a temperature of 82° to 86° Fahrenheit. When the experiment was repeated in the winter, not one of the animals died as long as the dose remained the same as in summer. M. Davaine concluded from his experiments that the two-thousandth part of the septicæmic matter needed in the cold season was sufficient to kill a guinea-pig in summer. Another curious fact is, that the seasons seem to exercise no influence on rabbits, who die both in winter and in summer from the same doses. However, M. Trélat thought it impossible not to trace a connection between these experiments and the facts which he had observed, especially as the latter were not isolated. Thus M. Cauchois, in his thesis on the etiology of hemorrhages, mentions that a few years ago, on a very hot day in June, more than a hundred cases of secondary hemor-

rhage were observed in the hospitals in Paris. It must be added that M. Cauchois shares M. Verneuil's views as to the fact that most secondary hemorrhages are of septicæmic origin. It may therefore be admitted that in these cases we meet with septicæmic accidents which have been caused by the influence of the temperature. M. Trélat has also shown long ago that the seasons have a great influence on the mortality in the lying-in hospitals. The practical conclusions which may be drawn from these facts is that, so far as operations are concerned, the summer season itself is not to be dreaded so much as the sultry days, or the great heat which often comes on suddenly and unexpectedly. Therefore, it will be safer to avoid as much as possible performing any operations during this season.—*British Med. Journal*, Sept. 6, 1879.

Retro-Pharyngeal Sarcoma.

At the late meeting of the American Laryngological Society (*St. Louis Med. and Surg. Journal*, Sept. 1879), Dr. F. I. KNIGHT, of Boston, reported the following rare case which he saw in consultation with Dr. CHAS. HOMANS.

A lady, thirty-six years of age, had had a hacking cough much of the time for four or five years, and hawking and raising of phlegm, with sensation of strangling in the morning, for the previous year. She had been subject to sore throat, always pronounced "tonsillitis," for four years. She had been subject to dyspnea on exertion for two years.

In January, 1877, having taken a severe cold, the cough was much exaggerated, she became debilitated, and was ordered to go South, and while at the South she first experienced a feeling of suffocation at night, which was several times afterwards repeated. She had had some dysphagia, but no pain in the throat. The voice was not affected. There was no family history of tumours. On her way North the throat was examined laryngoscopically for the first time by Dr. Samuel Johnston, of Baltimore, who discovered the large neoplasm, to be described. As the patient was unable to remain in Baltimore long enough to submit to treatment from Dr. Johnston, she returned to Boston, and came under my observation, as before mentioned.

On examination of the pharynx in the ordinary manner, nothing abnormal could be seen. With the laryngeal mirror a large tumour came into view, almost completely filling the upper cavity of the larynx. It was round, pretty smooth, rather soft to the touch, covered with congested mucous membrane, in which several vessels could be distinctly traced, and attached broadly in its posterior portion, exactly where, whether to the arytenoid region of the larynx, or to the posterior wall of the lower pharynx, could not be determined at that time. There was no ulceration, and no enlargement of lymphatic glands.

The situation of the growth was almost identical with that of a "fibroid" reported by Voltolini,¹ which also had a broad attachment, and which apparently did not recur after removal by the galvano-caustic loop. It was decided to remove the growth in our case by the same means, after preliminary tracheotomy. Dr. Homans did tracheotomy the next day. Instead of using a simple platinum loop, I had the extremity of Mackenzie's "guarded wheel éraseur" fitted to Voltolini's handle, and protected on the posterior aspect by hard rubber.

Nothing could have been more satisfactory than the operation, the growth being quickly removed close to the pharyngeal wall with but little hemorrhage. It was of the size of a small horse-chestnut, encapsulated, and its cut surface about half an inch in diameter. We had hoped that, notwithstanding its rather

¹ Die Anwendung der Galvanocaustik, etc., 2 te., Aufl. Wien, 1872, p. 226.

soft feeling, it, like Voltolini's, would prove a fibroid. But it was pronounced by Dr. Cutler, and afterwards by Dr. Fitz, to be a small-celled spindle sarcoma.

Dr. Cutler's report of the microscopic appearance of the growth after hardening was as follows: "It was composed of moderately small spindle cells, lying singly in a very small amount of intercellular substance. These cells were in many places arranged in bundles, which intersected each other in all directions. In a few places large numbers of round cells of medium size were found, and occasionally star-shaped cells were met with. By far the greater number of cells were spindle shaped. The growth was a spindle-celled sarcoma.

In a few days it had grown to almost its original size, and so it has remained for nearly two years, with a certain amount of shrinkage in the past year. The patient has continued to wear the tracheal tube, has had no difficulty in swallowing, and in fact little annoyance but from the tube, excepting occasional aphonia when she has taken cold. Ordinarily the voice has been very good when the tracheal tube was stopped. Both Dr. Homans and myself felt that it was better to wait for more urgent symptoms before undertaking a radical operation, which would not only endanger life, but involve the risk (with a growth so liable to recur, if life were saved), of increasing the discomfort of the patient.

I have been interested in looking up records of similar pharyngeal growths, and have made brief abstracts of cases found.

Arnott¹ reports the case of a female nineteen years of age, who had noticed a lump in her throat three months. Dysphagia and impaired speech (from obstructed nares) had existed longer. On examination a round tumour was seen filling the upper part of the pharynx, arising apparently from below. It was of the color of the surrounding parts, but its surface was rough and irregular. It was somewhat movable, and seemed attached by a pedicle to the posterior wall of the pharynx below the sight. It was removed by ligature and evulsion. There was no hemorrhage, and the patient left the hospital in a few days. Examination of the tumour showed it to be of the "size of a green walnut," with a narrow pedicle. The surface was mulberry-like. On section it was firm, of uniform character, and "corresponded with what has been called albuminous sarcoma." On microscopic examination there were found caudate, nucleated cells, and a thin layer of epithelial cells on its surface,

Arnott² reports another case, that of a female forty years of age, who received a blow from a man's fist on the left jaw. She suffered pain in this region till at the end of a month a suffocative attack at night led to the discovery of a small hard swelling of about the size of a hazelnut in the left fauces. When seen by Arnott a year and a half later she complained of attacks of suffocation and dyspnoea. She could swallow liquids or fine solids without difficulty. On examination a globular tumour projected from left of fauces two-thirds across the isthmus. It was smooth, covered by mucous membrane, had a broad base, and no trace of tonsil or posterior pillar of palate could be seen on the affected side. The mucous membrane was divided, then a layer of muscular fibre, and then a cyst, the walls of which having been pushed back, a ligature was applied, the growth sloughed, and potassa fusa was applied to the stump. At the end of three months the only evidences of disease were granulations arising from the projecting and everted edge of the contracted cyst. This was also called "albuminous sarcoma."

Busch³ gives three cases of what he designates as "retro-pharyngeal tumours." The first case was that of a man thirty-four years of age, whose voice had been modified for fourteen years. He had had dyspnoea for six months, with suffoca-

¹ Lond. Med. Gaz., N. S. 1845, vol. I, p. 530.

² L. c. p. 531.

³ Annalen des Charité-Krankenhauses, Jahrg. 8, hft. 1, p. 89, 1857.

tive attacks in his sleep. There is no mention of dysphagia. On examination a tumor as large as a goose egg, with somewhat uneven surface, was found to extend from the level of the epiglottis up behind the soft palate, which it pushed forward on the left side. The mucous membrane covering it was livid. The tonsil was seen in the middle of the tumor. The external carotid, having been seen to be dilated, was tied previous to the operation on the growth, in order to diminish hemorrhage. An incision was made in the soft palate and mucous membrane covering the tumour, which was then peeled out with the fingers and scalpel. It was so large that, notwithstanding the patient's front teeth were missing, it was with difficulty brought out of the mouth. It was pronounced a sarcoma in a firm connective tissue capsule. There was severe pharyngeal inflammation for a few days, after which the patient was declared cured.

The second case was that of a man aged seventy, who had felt a small bunch in his throat a year before admission to the hospital. On admission deglutition was very difficult. On examination a tumour was found coming from the left, which filled the pharynx. On swallowing, the food passed through a narrow ulcerated slit. The operation was the same as in the preceding case. The carotid, however, was not ligated. As the ulceration prevented the preservation of the mucous membrane intact, a crucial incision was made in it. Severe inflammation followed for a few days. The patient was discharged cured. The growth was stated to be morphologically like that of the preceding case, but with a great preponderance of unripe cell elements.

The third case reported by Busch is that of a man whose age is not stated, who had a growth of the size of a hen's egg, apparently similar to the preceding, arising from the right side of the pharynx. It did not cause him sufficient annoyance to induce him to consent to an operation.

Röser¹ reports a case which occurred in his practice in 1826. The patient's symptoms were dysphagia of six months' duration, extreme at time of examination, dangerous dyspnoea, nausea and vomiting, and hoarseness.

On ordinary inspection of the fauces nothing could be seen, but when the patient was made to gag, a smooth, soft, round, bright-red tumour came into view. By the finger it seemed to be attached to the posterior wall of the pharynx, low down. It was torn out with the forceps used for extracting stone from the bladder. It was two and a half inches in diameter, and covered with mucous membrane except at the place of attachment, which was as large as a "thaler." It looked like an ordinary fibroid, but was softer and more elastic. The microscope was not then in use. As the growth was softer and more elastic than an ordinary fibroid, it may have been sarcomatous. There was very slight hemorrhage after the operation.

Wagner (of Königsberg)² gives the case of a man twenty-six years of age, who for twelve years had noticed a small, movable tumour under left angle of lower jaw. This began to increase rather rapidly, and at the same time pain on swallowing was experienced. Some swelling was detected about the left tonsil. About seven months after this he was admitted to the hospital. Ten days before his admission severe pain running up the ear and brow had set in, and the growth increased so much that he could not swallow solids at all, and he swallowed liquids with difficulty. Several times suffocative attacks had occurred in his sleep, and quite considerable hemorrhage. On examination, there was found a tumour of the size of a pigeon's egg under left angle of jaw; inside, the left arches of palate

¹ Medicinisches Correspondenz-blatt des Württembergischen Aerztlichen Vereins. bd. 29, S. 161, 1869.

² Deutsche Klinik, 1861, p. 61.

and pharyngeal wall were pushed out by a tumour, which was elastic, firm, and smooth, and which seemed strongly attached to the bony wall of the pharynx. The left tonsil was not seen; where it naturally would have been, the tumour was ulcerated. The arcus palato-glossus and mucous membrane of the pharynx were incised, and the tumour dissected out with the fingers, scalpel, etc. It was apparently thoroughly removed. The external tumour was found to be quite distinct, and also removed. The inner growth arose from the retropharyngeal connective tissue of the spine, which was itself sound; it was of the size of the fist and extended from the base of the skull to the hyoid bone. It was pronounced a soft sarcoma. There was a speedy recurrence, frequent partial removal for relief, and finally death, five months after entrance, the patient having been choked by a piece of the tumour falling upon the larynx.

Larondelle¹ reports the case of a woman, twenty-eight years of age, who had had dysphagia sixteen months. For six months she had been unable to swallow solids, and had sometimes regurgitated liquids through the nose. Her voice was thick, hoarse, and nasal. She had severe paroxysms of cough, and suffocation; also nausea and vomiting. On examination a large, round, smooth tumour, reddish in color, was seen filling the space between the base of the tongue, the posterior wall of the pharynx, and the larynx. It was attached by a short pedicle (about two centimetres thick) to the left lateral wall of the pharynx below the tonsil. It was removed by the *écraseur*. It measured seven by four centimetres. It consisted of connective and elastic tissue surrounding alveoli filled with fat cells. Adipose tissue very abundant. It was called sarcoma. Perhaps it should have been classed rather as a lipoma. The pedicle seemed to consist only of mucous membrane. There had been no recurrence at the end of seven months.

Rosenbach² reports a case operated on by Prof. Baum, of Göttingen. A man, forty-five years of age, was sent to the hospital on account of dysphagia and dyspnoea, with suffocative attacks, which had been developing for six months or more. He had coughed up a piece of new growth half as large as the terminal phalanx of the thumb. On examination of fauces, a large reddish tumour was discovered. It was soft, and its surface was uneven, presenting large and small projections. It was adherent to the pharynx on the right of the hyoid bone. It measured one centimetre horizontally, more vertically. There was no lymphatic enlargement. Tracheotomy was done. Trendelenburg's canula was introduced, and then sub-hyoid pharyngotomy was performed. The growth was torn away with the fingers, and ligatures put upon the adherent stump. The growth was pronounced a round-cell sarcoma. The patient was discharged cured, but there was no subsequent report from him.

Venturini³ reports the case of a boy, twelve years of age. A year before seen by V. he had had otorrhœa of the right ear, and some enlargement of the cervical glands of the same side. At this time he had some inconvenience in swallowing. When seen by Venturini he was emaciated and livid, and had three large glandular swellings of the right side of the neck.

On examination of the fauces, a large tumour was discovered attached by an extremely short pedicle to the right posterior pillar of the pharynx. On moving it, the patient was threatened with suffocation. It was removed at once by the largest sized wire *écraseur*. There was but little hemorrhage. The wound healed quickly, and the glandular swellings diminished. The tumour was of the size of a small apple, of a rosy color, nearly round, smooth, elastic, and of a soft, meaty consistence.

¹ Bulletin L'Académie de Médecine de Belgique III Serie. Tome 4, p. 133. 1370.

² Berliner Klinische Wochenschrift, 1875, p. 519.

³ L'Ippocratico, 1871, vol. xix., 3 Ser. p. 89.

On section it had a lardaceous appearance, and on scraping, a reddish-yellow fluid was exuded. The vessels from the pedicle ramified freely in the tumour. On microscopic examination were found uniform round cells, and a granular protoplasm nucleated and contained in a scanty amorphous cellular substance. All the surface of the tumour was covered with pavement epithelium, which connected with it by fibres of connective tissue. The patient was seen three months after the operation. He looked well, and there was no appearance of the reproduction of the tumour. There was still a trace of the operation, and the right tonsil was somewhat atrophied.

Billroth¹ reports the removal by the *écraseur* of a fibro-sarcomatous polypus of the size of a hen's egg from the pharynx. After nearly six years the patient, who was a man of fifty years, showed no signs of recurrence.

Mr. Syme² reports a case of "Fibrous Tumor of the Fauces," which Busch thinks was more likely a retropharyngeal sarcoma. A man, of thirty-eight years, presented himself, having a large, round, firm tumour, somewhat nodulated, in the region of the left tonsil. It was somewhat movable. It was as large as a small potato. The mucous membrane was divided, and the growth dissected out. The subsequent history as to recurrence is not given.

J. Carreno³ gives the history of a rather remarkable case. Twenty-one years before his visit to Carreno, the patient, who was then a man of forty-nine years, had noticed in his throat one day while shaving himself a few bodies resembling hairs or straws, which terminated at their ends in little balls about the size of lentils. When Carreno saw him he had terrible dyspnoea, and dysphagia, and stated that during an attack of vomiting, a tumour had protruded an inch outside of the mouth. On examination two large tumors were seen in the fauces, pedicellated, one measuring four inches in length and two and one-half inches in thickness, with a thick and long pedicle, the other three and one-half inches in length, and more than four inches in thickness, its pedicle being thick and short, somewhat resembling cartilage. Their color was that of raw meat. The first was ligated and removed with the bistoury. The second was ligated and removed with a lithotome and curved scissors. The removal of these two revealed the existence of two other pedicellated growths rising from the bases of the preceding ones, and these were ligated several days after. There was much hemorrhage, and danger of suffocation from loosening of a ligature, which was controlled by another. The growths were pronounced fibro-cellular, and contained in their interior a tallow-like, concrete substance, ramified with vessels. They originated in the submucous cellular tissue.

Dr. S. H. Chapman⁴ reports a case of "Sarcoma of the Inferior Constrictor of the Pharynx and Inlet of the Oesophagus," which, however, belonged more to the oesophagus, than pharynx, and so does not much concern us at the present time.

Dr. Busch,⁵ of Bonn, at the sixth Congress of the Society of German Surgeons, showed several retro-pharyngeal tumors, one of them a lipoma of the size of the fist. He said that these tumors were rather frequently met with in Bonn. They were lymphomata, fibromata, sarcomata, and rarely lipomata; generally encapsuled and easily removed. Their removal was, however, rendered difficult by the previous employment of electrolysis, the galvano-cautery, etc., which led to the destruction of the capsular limitation and to cicatricial induration between

¹ Langenbeck's Archiv für Klinische Chirurgie, Bd. x S. 207.

² London Lancet, 1856, vol. i. p. 51.

³ Observaciones de cuatro polipos situados en el centro de la faringe Decados de Med. y Cir. pract. Madrid, 1828, vol. xvii. p. 217.

⁴ The American Journal of the Medical Sciences, Oct. 1877.

⁵ London Medical Record, Oct. 15, 1877.

the sheath of the carotid, the bucco-pharyngeal fascia, and the surface of the tumor rendering the separation of the latter from the carotid a difficult and dangerous proceeding.

Dr. Cohen¹ refers to a case of round-celled sarcoma of the pharynx, with extensive attachments, which had been attending the surgical clinics at Jefferson Medical College for two years, in which tracheotomy was performed, and large masses removed from time to time for several months subsequently; Dr. Cohen remarks that it is quite likely that the patient would not have survived as long had a radical operation been performed when he first presented himself.

It will suggest itself at once that the facts given do not warrant us in classifying all of these cases under the head of sarcomata. There is no doubt, furthermore, that other cases which have been recorded as fibroid, belong to this class. It will be seen also that the nature of the growths, properly classed as sarcomata, is very varied, so that we cannot rightly compare even them for the sake of making any deduction as to their clinical history, *i. e.*, time and mode of development, liability to recurrence, etc.

They are interesting, because rare, and with reference to practical procedure. The pedicellated growths are easily disposed of, by ligature, *écraseur*, snare, scissors, etc. Those with a broad base are much harder to deal with. Few would be as successful as Röser, in tearing out such a growth with forceps. If it is situated high in the pharynx, it may be dissected out, as in the cases of Arnott (2d case), Busch, and Wagner. But even in this case, if the tumour is situated at the side of the pharynx, which, as we have seen, occurs in many instances, the proximity of the carotid artery and its branches may render the operation very embarrassing, and we have seen that Busch took the precaution to tie the external carotid in one case, having found that vessel to be dilated.

If the growth of the broad base is situated low in the pharynx, there seems little hope from any operation but pharyngotomy. Sub-hyoid pharyngotomy has been performed twice for the removal of tumours of the pharynx, once successfully and once with a fatal result. The fatal case was the well-known one of Langenbeck,² in which the operation was performed for the removal of a fibroma of the size of a Bordsdorff apple. Twenty-five ligatures were required, there was much hemorrhage, both primary and secondary, and the patient died on the second day after the operation. The successful case was that of Prof. Baum, reported by Rosenbach, to which we have already made reference.

The propriety of performing this serious and certainly hazardous operation, upon a growth liable to recurrence, before urgent symptoms demand it, I should like to make the subject of discussion by the Association.

Dr. COHEN, of Philadelphia, said that where the symptoms produced by sarcoma were not urgent or could be combated by other resources and the growth was not rapid, he would certainly hesitate in advising an operation. Where symptoms were urgent, or where the growth was rapid, the propriety of evulsion would depend upon a sufficiently limited extent of implication of tissue to justify a hope that the entire mass might be eradicated, with a certain amount of surrounding tissue apparently still healthy. When the attachments of a sarcoma were sufficiently extensive to preclude a hope of removing the entire mass, the only justification for operative procedure would be the desire of averting immediate or approximatively immediate death, and thus prolonging the life of the individual for a brief period.

Dr. LEFFERTS, of New York, said Dr. Knight has raised the question as to the propriety of removing the tumor in his case, through an incision in the thyro-

¹ Diseases of the Throat and Nasal Passages, 2d Ed. New York, 1879, p. 252.

² Allg. Central-Zeit, 1870, January 29.

hyoid space, and as to the danger of the operation. "Sub-hyoidean laryngotomy," or perhaps more correctly, "pharyngotomy," has been performed but once in this country, and then by myself, for the removal of a foreign body impacted for years in the upper parts of the larynx. No accident happened during it, no difficulty was met with, and I should, from my experience of operations in general, regard this as a very easy and safe one, as far as the operation itself is concerned. The results, as recorded when it has been performed for the removal of pharyngeal growths, have not been favourable; results attributable, I believe, to the nature and location of the neoplasm, and not to the operation *per se*. Whether or not it be indicated in Dr. Knight's case, which the nature and location of the tumour make a serious one, that is to say, whether he will be able to best reach the growth by this means, he must judge, his repeated examinations fitting him for the task. He has other operations at his disposal, such as dividing the lower jaw in the median line and separating its halves, a procedure which increases most markedly our opportunity of reaching and working in the lower pharynx. Finally the question presents itself whether we shall, in such a case as that of Dr. Knight's (the growth being known to be sarcomatous, and therefore, in all probability recurrent in its nature, the symptoms not at this date urgent, certainly not dangerous, and the operation which best perhaps presents a feasible hope of reaching the mass so thoroughly as to remove it entire, being one where results, when undertaken for this particular purpose, are not good) operate at once or wait for more urgent surgical indications. Here, again, individual experience and peculiar views must decide. I should be in favour, in the *present instance*, of waiting at least for a time if my interpretations of the signs as I have heard them read be correct; but there is likewise much to be said, probably, by the advocates of early extirpation.

Enterotomy.

At a meeting of the Medical Society in Marburg, held last year, Professor RÖSER related (*Berliner Klin. Wochenschrift*, June 30th) a case of enterotomy for stricture of the bowel, and made some remarks on the subject. In the case referred to, the sloughing and separation of an invaginated portion of the small intestine was preceded by the formation of a cicatricial stricture; and an attempt was made to relieve the patient by enterotomy and the division of the cicatricial tissue. The patient died of peritonitis. Dr. Rösler concluded his communication with the following remarks on enterotomy. 1. After opening the abdomen, the best plan, as a rule, is to introduce the hand as far as the cæcum, and thence trace upwards from the lower end of the small intestine; provided, of course, that there be no reason for believing the stricture to be in the large intestine or in any other special part. 2. When it is necessary to make an incision into and to empty a portion of intestine that is very full, it is safest to draw this portion of bowel forward and to lay the patient on his side, in order to prevent the escape of the contents of the bowel into the abdominal cavity. 3. In these circumstances, the escape of the intestinal contents is at first impetuous and explosive, afterwards intermittent. The first outflow is caused by elastic resiliency; that which follows, by the peristaltic action of the muscles. 4. In order to restrain this secondary escape, it may be of advantage to apply provisional sutures to the opening in the bowel, and to fasten the intestine by the threads to the wound in the abdominal wall. After this, the sutures may be loosened when necessary, and the contents of the intestine allowed to escape. This is in accordance with Nélaton's teaching, that in many cases only a temporary opening of the bowel is necessary, and not a permanent artificial anus. 5. A temporary opening of the

intestine is especially indicated in cases of valvular stricture, where the portion of bowel above the valve is much distended. 6. Among the forms of intestinal stricture demanding enterotomy, that which follows local peritonitis after the successful application of taxis for hernia merits special attention. If, some weeks after the reduction of a strangulated hernia, symptoms of ileus appear, there is reason for suspecting the presence of inflammatory adhesion and contraction. This suspicion was confirmed in a case which had recently occurred, in which enterotomy was performed, too late, on the twenty-third day after symptoms of obstruction appeared.—*British Med. Journal*, Sept. 27, 1879.

Cancer of the Rectum treated by Excision.

Mr. W. H. CRIPPS, Surgeon to the Great Northern Hospital, reports (*British Med. Journal*, Sept. 27, 1879) two cases of cancer of rectum in which excision was successfully performed. He says excision of the diseased portion of the bowel for cancer of the rectum has, since the time of Lisfranc, found much favour with foreign surgeons. The operation had, however, fallen into disfavour in this country, and has only been revived during the past few years. In cases judiciously selected, this method of treatment is of the greatest value, both as regards relief from suffering and prolongation of life. But to suppose that it is applicable as a method of treatment in every case of rectal cancer is as unreasonable as the assumption that cancer should be removed by operation whersoever situated. The operation cannot be considered in any way to rival or supersede colotomy, for as a rule it is applicable as a method of treatment for cases in which colotomy is scarcely admissible. Colotomy is a most valuable operation when the cancer is situated higher and causes obstruction or intense pain; while, on the other hand, for excision to be successful, the disease must strictly be confined to the lower part of the bowel. No operation should be attempted unless there be a fair prospect of removing the whole disease; and this cannot be done unless the upper limit of the growth be fairly defined with the finger. Again, the disease must not have invaded the neighbouring tissues to an extent likely to interfere with its complete extirpation. Rather longer portions of the bowel can be removed from men than from women. As a rule, however, four inches is the limit that can be safely removed.

Rectal cancer almost invariably begins as an adenoid deposit in the submucous tissue. The microscopic structure of the growth bears an exact resemblance to the natural Lieberkühn's follicles in the superjacent tissue. If the growth be slow, this resemblance in structure is very perfect; if more rapid, the general plan of an adenoid structure can be traced, but neither the epithelium lining the follicles nor the retiform tissue in the interfollicular spaces can be well defined; there is no regularity in the shape of the epithelial cells, indeed, they rather resemble strips of protoplasm with longitudinal striæ than distinct columnar cells. Again, the fibrous element of the retiform tissue is represented by spindle- or oat-shaped cells rather than by the distinct fibrous structure found in more chronic growths. At first, the mucous membrane is intact over the growth, which can be felt like a foreign body beneath it. It commonly spreads as a thin layer between the mucous and muscular coats; and not uncommonly will the disease thus spread under several square inches of mucous membrane, while its thickness scarcely exceeds one-fifth of an inch; at other times, but more rarely, the disease increases more rapidly in thickness, pushing the mucous membrane inwards, producing a distinct tumour in the cavity of the bowel. Sooner or later, ulcerative action sets in. At first, the mucous membrane over the centre of the mass is destroyed, exposing the subjacent growth. Now, if this subjacent growth exist as a thin layer,

it also is destroyed by a continuation of the ulcerative action. It thus not uncommonly happens that a deep ulceration is produced, the base of which, towards its centre, is composed of the remains of the hypertrophied muscular coat blended into a dense cicatricial tissue with the fibrous element of the part. Towards the margin of the ulcer the growth is again apparent, forming a prominent overlapping margin. From points of this margin fungating masses will in time project into the rectum, in which condition the disease usually comes under observation. Space, unfortunately, forbids a minute description of the histological appearance of these growths. The so-called scirrhus, medullary, and epithelial growths are merely "conditions" of adenoid disease, and can be accounted for by taking into consideration the time the growth has been in existence and the particular tissue affected. The appearance commonly regarded as indicative of scirrhus, medullary, or epithelial disease can all be found in various parts of the same specimen.

My experience of the operation of extirpation is too limited to express an opinion as to the rate of mortality likely to follow; and in the majority of cases the operation has been too recently performed to judge of the liability of the disease to return. In five cases in which I have operated, no death has occurred; while in nine operations at which I have assisted, two deaths resulted: one from peritonitis, one from collapse. The best result with which I am conversant is a case in which a well-marked cylindrical cancer was removed nearly three years ago; the patient still remains perfectly well. The two following cases may perhaps serve as examples of what may be expected from the operation. A successful and an unsuccessful case have purposely been selected as illustrations.

CASE I.—A. M., aged 61, being kindly sent to me by my friend Mr. Doran, was admitted under my care at the Great Northern Hospital in April, 1878. She was very thin and emaciated, and for some time had been unable to follow her occupation as a laundress. For more than a year, she had suffered discomfort in the rectum, and had lost blood from time to time, a mucopurulent discharge being persistent. During the last few months, the pain had greatly increased, her nights were sleepless, she was tormented with a constant desire to go to stool. She suffered from alternate attacks of diarrhoea and constipation, and could not retain her feces when liquid. On examination with the finger, commencing just within the anus and extending upwards a couple of inches, an ulcerated mass of cancer was felt. This did not completely surround the bowel, a small portion of the anterior wall being free. The patient being placed under chloroform, and in the lithotomy position, a curved bistoury guided by the finger was introduced into the rectum, the point then thrust through the posterior rectal wall, and made to emerge at the tip of coccyx; the tissues intervening between this point and the margin of the anus were cut through with a clean sweep. The sides of the wound being held apart by the folds of the nates being forcibly drawn outwards, a semilunar incision was made at right angles to the first cut; this, the second incision, was just within the margin of the anus, and extending completely round the bowel, while in depth the point of the knife was carried well into the fat of the ischio-rectal fossa. The lateral and posterior attachments of the bowel were separated by the forefinger with the sparing use of the cautery and the knife. The dissection of the anterior wall was made more carefully and entirely with the knife. The free portion of the bowel was now seized and drawn down with a moderate amount of force, and cut through just above the disease by means of the benzoline cautery. No attempt was made to draw down the bowel, neither were any sutures or dressings used. The patient made a quick recovery, leaving the hospital in three weeks free from all pain, with some control over her motions, and her general health greatly improved. Three months after this operation, she had complete control over the motions, except when she had diarrhoea, at which times

her linen would be a little stained. She complained of no pain, but of a slight itching sensation. Upon examining the parts, there was found a small rose-coloured elevation, of the size of a split pea, upon the anterior margin of the mucous membrane. This was snipped off pretty freely with scissors. Since then, the patient has been frequently seen; she suffers no pain whatever, has not the slightest symptom of any return of the disease, and states that she enjoys better health now (June 16th, 1879) than for many years past. When she has diarrhœa, however, she has to wear a diaper; this causes her no inconvenience. It is now one year and two months since the operation.

CASE II.—A. G., aged 54, a small emaciated woman, with a dark complexion, was admitted into the Royal Free Hospital, November 7th. She has six children living, in good health, and has lost none. The father and mother died at advanced ages; there was no family history of tumours or phthisis. The patient had good health until two years ago, but has always been subject to constipation, for which she has taken castor-oil in considerable quantities. Two years ago, she began to suffer from pain and a feeling of weight in the rectum. Eighteen months ago, she first noticed a discharge of blood and mucus from the bowel. During the past year, she has lost flesh rapidly, having formerly been very stout. She had been for some months in a London hospital, but obtained no relief. Her sufferings were very great; she had lost control over the sphincter, the feces escaping without her knowledge. Upon examination, the parts were found to be very tender, with a growth extending almost to the margin of the anus, about which the skin was œdematous and excoriated. A considerable mass of the disease occupied the lower three inches of the bowel, taking the form of a large irregular ulceration with a hard base and fungating margins. At one point, the disease extended somewhat higher than three inches. The recto-vaginal septum was implicated, but the mucous membrane on the vaginal aspect appeared sound.

Considering the length of time that the disease had existed, and the extent to which it had encroached on the anterior wall of the rectum, it did not seem a very favourable case for operation. The patient, however, was exceedingly anxious to have an attempt made to remove it, having been recommended to consult me for that purpose by my friend and colleague Mr. Macready. The operation was performed in an almost precisely similar manner to that in the previous case. There was no difficulty in detaching the bowel from its posterior and lateral connections, but it required some time and caution to dissect through the rectovaginal septum; this was done by keeping as near as possible to the mucous lining of the vagina; but even at the time there appeared a suspicion that the disease at this part had not been thoroughly removed. Whilst detaching the upper anterior part of the rectum, the peritoneal membrane was distinctly seen. The diseased bowel being drawn down was cut off with a wire *écraseur* a little more than three inches from the anus. Upon detaching the portion, a small coil of intestine was seen in the upper part of the wound, but it was not known at what period of the operation the peritoneal membrane had been opened. The knuckle of the bowel was gently pressed up by the finger and disappeared. The wound was treated in the ordinary way, without any dressings or sutures, and kept thoroughly free from all discharge by frequent syringing with warm carbolic lotion. The patient never had a symptom of peritonitis, recovered quickly, and left the hospital at the end of the month free from all pain and much stronger and more comfortable than she had been for a long time; she had no pain on passing her motions, over which she had a fair amount of control. She appeared well and comfortable for three months; she then complained of some irritation about the part, and upon examination a soft fungating nodule could be felt springing from the anterior wall of the rectum. She suffered little pain. A month later, the disease had greatly increased, forming a

considerable fungoid mass, blocking up the lower end of the rectum, causing some difficulty in passing her motions. It did not seem advisable to make any further attempt by a cutting operation; but, acting as other surgeons have done in these circumstances, as far as I could with the finger-nail and a blunt gouge, I scraped away the cauliflower mass down to its hard base. The growth was very soft, but did not bleed much. She was greatly relieved by this proceeding, the motions again passing with comparative ease. A rapid return is, however, inevitable.

The microscopic appearances of the growths in both the cases narrated were identical, the difference in result being probably due to a more thorough extirpation being possible in the first case.

Various methods of performing the operation of extirpation of the rectum have been practised. The ligature, the cautery, and the *écraseur*, either singly or combined, all have their advocates. From my own experience, however, these various adjuncts appear to be unnecessary. They greatly prolong and complicate an otherwise simple operation. The free and quick use of the knife for all the first part of the operation, reserving the wire *écraseur* for the final separation of the bowel, appears to me to be the best plan of operating. The preliminary posterior incision of Denonvilliers is of the greatest service during the operation, and completely unfolds the parts and gives plenty of room for dealing with hemorrhage, while it subsequently affords perfect drainage to the wound. No good results from the drawing down of the cut bowel and stitching it to the cutaneous surface; the stitches always give way, and until they do so are a source of danger, by allowing matter to be pent up behind the bowel. I use no dressing nor sutures of any kind whatever; for anything that hinders free discharge is deleterious, owing to the near neighbourhood of the peritoneum and the rapid decomposition that takes place in this part of the body. A frequent gentle and thorough syringing, so as to prevent any accumulation in the wound, is probably the best way of preventing peritonitis.

Abscess communicating with the Bladder and Rectum.

M. DUCHAUSSAY related the following interesting fact at the meeting of a medical society (*France Médicale*, No. 103): A gentleman aged 55 was suddenly taken ill during the night with excruciating pains in the abdomen, vomiting, and rigor. One physician diagnosed an attack of nephritic colic; another attributed it to gravel, but did not find any on passing a sound into the bladder. M. Duchaussay thought that there might be some obstruction in the intestine not far from the bladder, and attempted to remove it by an injection of water. Three days later the patient passed pus with his urine and through the rectum. This showed that an abscess must have burst somewhere between the bladder and the rectum, communicating with both. Fecal matter was passed through the bladder. Disinfecting injections of a solution of carbolic acid, etc., were daily used, and the patient bathed frequently. The inflammation was not considerable. There was myelitis, and gradually the feces ceased to be passed through the bladder, except in particles not larger than grains of sand. The patient could take a little food, was sent to a watering-place, and soon recovered. This happened eighteen months before the case was reported. For the last three months the communication between the bladder and rectum had been closed; the patient passed a little glairy matter from the bowels; and, two weeks ago, two pieces of fleshy matter escaped. On examining the intestine it was found that there existed a contraction about five inches from the bladder; the mucous membrane was red and inflamed. The patient was taking twice a week an injection of two pints of water, and a small one daily. To prevent the intestine from being entirely closed, a bougie No. 30 had first been used, and afterwards an ordinary rectal bougie had

been inserted into the intestine to keep it open. The cause of this affection is not clear; but in all probability it was due to some small foreign body which had in some way become imbedded into the mucous membrane, thereby causing an abscess.—*British Med. Journal*, Oct. 4, 1879.

Symmetrical Gangrene of the Extremities.

Under this title Dr. J. COLLINS WARREN reports (*Boston Med. and Surg. Journal*, January 16, 1879) the following very interesting case with remarks:—

The patient, a rather feeble person, and of spare habit, presented herself at the Massachusetts General Hospital on June 27, 1878, with a peculiar condition of the tips of all the fingers and toes. She was a native of Scotland, a weaver, unmarried, and twenty-five years of age. The affection was of a character to arrest the attention at the first glance, and differed from anything hitherto observed by many who saw her. The seat of the disease was confined to the pulps of the fingers and toes, usually extending around the edge of the nail to the opposite side. Another striking feature was the colour. The borders of the affected area resembled the semi-transparent purple of a hot-house grape. There was none of the reddish tint seen in intestine at certain stages of strangulation. The lightest shades were always essentially purple in colour. As the centre was approached the hue deepened, until it was difficult to determine whether or not the tissue had assumed the characteristic colour and condition of gangrene. The patient did not complain of much pain, but had become totally incapacitated for work, owing to the condition of her hands. She had been in good health until four months previously, at which time she suffered from frequent nose-bleed during two weeks. Soon after this she noticed that the tips of the fingers and toes became red. She had had a slight cough, and had been losing flesh, but emaciation was not marked, nor did she consider herself as suffering in any other way than from the condition of her hands and feet. An examination of the chest showed some dullness and râles at the apex of the left lung; the heart sounds were normal. There was no history of syphilis. A more careful examination of the finger tips disclosed the fact that the centres of one or two of these purple patches were gangrenous. This became more marked in a few days, and eventually several dry, black eschars, the largest of which was not larger than a ten-cent piece, came away, leaving a healthy granulating surface. In no case was the bone affected. The treatment consisted of the administration of iron internally, good food, and the application of resin cerate to the parts. On July 16th the record states that all but two of the fingers have had sloughs, and these two look as if they were going to slough. The toes have recovered their normal appearance. Although no complaint of pain was made, the patient always held the hands in an elevated position, as if this gave most relief. On August 15th, when she left the hospital, the granulating surfaces had all healed, and the fingers presented a red and shriveled look. There was no gangrene of the toes. The general condition at time of discharge was good.

Symmetrical gangrene, as described by Maurice Raynaud,¹ is a variety of dry gangrene characterized by two prominent features, the absence of any anatomical lesions of the bloodvessels, and the symmetrical development of the disease in the two halves of the body. It may be found in both upper or both lower extremities, or in all four; occasionally the ears and nose are affected.

The earliest change seen in the diseased part is that termed "local syncope," a condition, however, perfectly compatible with health. The patient, generally a woman, perceives a pallor and coldness of one or more fingers. This change,

¹ *Nouveau Dictionnaire de Médecine et de Chirurgie*, vol. xv., page 686.

known as "dead fingers," may last a few minutes or several hours. The exciting cause appears to be an exposure to cold, although but a slight lowering of the temperature is sufficient to produce it. It appears, however, sometimes to be emotional in character. The skin is apparently deprived of its blood, and its temperature is below normal. The reaction which follows is frequently quite painful. A more advanced condition is known as "local asphyxia;" the pallor is followed by a cyanotic colour of varying degrees of intensity. On pressure the colour disappears, and returns very slowly, showing great feebleness in the circulation. The pain is now almost continuous, and in some cases may be compared to that accompanying onychia, particularly when reaction sets in. This condition resembles that seen in cyanosis, but in the latter affection we find organic disease, and there is no pain and no reaction. The clubbed finger nails of cyanosis, erroneously attributed by some authors to phthisis alone, is never seen in local asphyxia.

In the outset the disease is sometimes mistaken for chilblains, but the deepening colour and pain soon set all doubt at rest. The fingers may become almost black, and minute blisters appear, particularly on the little finger, later on others, and situated generally at the extremity. The blister becomes filled with a seropurulent fluid, breaks, and leaves an excoriation which may remain several days. The colour begins now to return, the excoriation heals, and a little conical tubercle is left just beneath the edge of the nail. The improvement is, however, only temporary; the same changes recur, and may be repeated during a period lasting one or two years. In an advanced stage the ends of the fingers are covered with a number of little white scars, the skin is indurated, and they have a thin, sharp, withered look, as if they had been pinched in a vice, and had preserved the shape thus given to them.

If gangrene sets in at once there are no vesicles. A third or one-half of the ungual phalanx may come away.

During the height of the disease the growth of the nail stops temporarily, and the interval is subsequently indicated by a grooved depression in the nail. The disease has not been known to terminate in gangrene when situated in the nose and ears. Cases cited below show this statement to be incorrect. Beyond the severe pain, upon which Raynaud dwells as a very striking symptom, we find little else to notice in the condition of the patient. No cardiac disease is found; possibly a slight souffle may be heard, but not of sufficient strength to indicate valvular lesions.

In well-marked cases the disease occupies a period varying from a few days to a month in developing; it remains at its height for about ten days, and convalescence may be fully established at the end of from three weeks to several months. In no case does death seem to have been caused directly by the disease. Occasionally, after one or two attacks, the condition becomes a more or less permanent one, and the part affected is continually cold and torpid. At times the skin of the back of the hands and fingers becomes thickened and rigid, and is not movable on the subjacent parts. The fingers are held semiflexed and ankylosed. The two affections most likely to be mistaken for this disease are chilblains and senile gangrene. In the former we are not likely to find all extremities affected at an unusual time of the year. Senile gangrene is rarely bilateral; it extends much further; the characteristic condition of the arteries is usually present. It is easily distinguished from cyanosis depending on cardiac disease. Owing to the predominance of pain it has sometimes been mistaken for gout. The prognosis is favourable. If the stage of gangrene develops itself at the end of a week or ten days, it is probable that a complete recovery will follow the separation of the eschara. If, however, the disease does not reach this point,

but comes and goes, there is danger that it will settle down into a chronic condition.

In four-fifths of the cases the disease is found in women. In the great majority of cases it occurs between the ages of eighteen and thirty years.

As a low temperature is an exciting cause, we find it most frequently on the approach of the winter months. Not infrequently there may be premonitory symptoms for one or two winters, with return to health in the summer season, and a final termination in gangrene. In one case the disease was found to coexist with diabetes mellitus. Ordinarily we observe no special predisposing cause in the general condition of the patient. How are we to explain these peculiar changes in the vascular system?

It is well known that the quantity of blood in circulation in a given spot increases when the capillary walls are relaxed; that it is diminished, on the other hand, when the walls are contracted; and, when the cavity of the vessel is obliterated, the blood disappears from the part.

This *algidity* may terminate in reaction,—relaxation of the muscular fibres of the vessels,—or it may continue until gangrene takes place.

Symmetrical gangrene begins with a spasm of the capillaries, which may go back as far as arteries of considerable size (radial pulse).

In the simplest cases of spasm we have the "*dead finger*," a passing condition in which the circulation is re-established after a more or less painful period of reaction. This is "*local syncope*." The veins probably are contracted also. The phrase "*local asphyxia*" is used to denote a more advanced condition. The reaction which follows spasm is here incomplete. The veins having the smallest amount of muscular fibres relax first, and the venous blood flows back into the capillaries, but stops here, as the arteries are still contracted. It will be noticed that this change does not bring about that deep colour which we find in an extremity which has been violently constricted. In the latter case the venous blood is forced back into the arterial system. As in local asphyxia, the reflux stops at the capillaries. There is more transparency in the colour, a mixture of cyanosis and pallor, as it were. There is, of course, as the result of this condition, a certain amount of stagnation in the large veins, and sometimes slight oedema.

On one occasion the author had actual proof of this arterial spasm in a case where temporary disturbance of vision occurred during the attacks; the ophthalmoscope showed a well-marked contraction of the central artery of the retina.

If the condition becomes a permanent one gangrene occurs. Other portions of the body are affected, of course, with this muscular spasm of the arteries, but it is only in the extremities which present a large surface in proportion to their calibre, and consequently readily lose heat, that the conditions are favourable for the death of the part.

How shall we explain the symmetrical character of the lesions? A consideration of the mode of origin, distribution, and action of the vaso-motor nerves may serve to throw light upon this point.

We now no longer look upon the sympathetic as an independent nerve having no communication with the cord. We find filaments of this nerve emerging from the cord in the anterior branches. The same phenomena of congestion which Bernard obtained by division of the sympathetic above the superior cervical ganglion can be obtained by certain sections in different portions of the cord. Experiments have shown that there exists a series of genuine vaso-motor centres ranged up and down the spinal axis. The actual origin of the vaso-motor nerves of given portions of the body has been determined with tolerable accuracy. Starting from this point the fibres in question follow those of the grand sympathetic, or, as in some cases, the cerebro-spinal trunks.

An experiment by Brown-Séguard throws light upon the special action of this nerve which is brought into play in the present disease. A section of one-half of the spinal cord near the medulla is followed by a paralysis of the bloodvessels on the same side, and a permanent spasmodic contraction of them on the opposite side. There are also corresponding changes of temperature. It is clear that the vaso-motors on the divided side, having lost connection with their point of origin, are paralyzed, and a passive congestion takes place in the corresponding part, while the lesion of the cord, being a source of irritation to the adjacent vaso-motors of the opposite side, produces a spasmodic contraction of the vessels on that side. It is known that an intimate communication exists between the fibres of this set of nerves as well as in the fibres of nerves of voluntary motion.

Let us suppose now that an irritation is created in the central portion of the cord; it is easy to conceive how it would reach the vaso-motor fibres symmetrically disposed on each side of the spinal axis. If this excitation becomes permanent, if it go to the point of tetanization, the phenomena of algidity occur; one step further and the symmetrical gangrene is produced.

In order to understand how this algidity may be confined to one set of vessels—for instance, those of the upper or lower limbs—it is only necessary to suppose a central irritation occurring at a single point in the cord from which the vaso-motors of the particular region affected happen to emerge. This may be limited to a single finger of each side. It now remains to determine the way in which this irritation is supposed to act. The vaso-motor nerves are affected not only by direct irritation, as in the experiment alluded to, but may be also susceptible to reflex action. An example of this is the contraction of the vessels of one hand when the other is suddenly plunged into very cold water. A similar action is the sudden pallor produced in the face by severe pain inflicted upon some distant point. In the disease we are now considering it is probable that a similar chain of events takes place.

Inasmuch as this disease appears after confinements, or may show itself periodically at the menstrual epoch, it is but reasonable to suppose that the reflex irritation may take its origin in the uterus. In a later article¹ on the subject, Raynaud defines this disease as "a neurosis characterized by an exaggeration of the excito-motor power of the cord presiding over the vaso-motor nerves," and he advises the application of "constant descending currents" to the spine. The excito-motor power of the cord is thus weakened, and the reflex contractions of the vessels are in consequence diminished.

A consideration of the reflex origin of this vaso-motor disturbance would suggest occasional phenomena, such, for instance, as are observed in traumatic inflammations, supposed to be due to reflex actions brought about by irritation of the cerebro-spinal nerves, and, in fact, we find this to be the case. Vulpius² has described, in connection with the above disease, a symmetrical congestion of the extremities which he considers as similar to the congestion of the skin seen in certain cases of neuralgia. It is possible, he thinks, that a sort of symmetrical neurosis of the peripheral nerves of the extremities occurs, causing by reflex action dilatation of the vessels of the parts. In using the term vaso-motor neurosis we must accept it in this sense only. The seat of the pain is in the sensitive nerves or in the tissue occupied by them, and the dilatation of the vessels secondary. Based on this mode of action is the theory of one observer³ that neuralgia of the ilio-lumbar nerve brings on congestion of the uterus and its appendages, and that metrorrhagia and leucorrhœa may thus be produced.

¹ Archives Générales de Médecine, 1874, page 5.

² Leçons sur l'Appareil vaso-moteur. Vulpius. Paris. 1875.

³ Cahier des Nevroses vaso-motrices (Archives Générales de Médecine, 1863).

This view is certainly plausible, and the supposition had already occurred to me whether certain fleeting and capricious uterine pains, brought on frequently by emotional perturbations solely, might not be explained by a vaso-motor disturbance of the uterine vessels. The changes seen in the tongue in Dr. Mills's case, presently to be mentioned, are suggestive of such possibilities.

Billroth¹ had seen but one case:—

"A young, very anæmic man, without apparent cause, had first gangrene of the tip of the nose, then of both feet. After suffering for months he died; as on the patient, so on the cadaver, I could find nothing morbid beyond the excessive, inexplicable anæmia." Recently Dr. Medopil² reported a case under Billroth's care. The patient was a female, nineteen years of age. She was first seen by Dr. Billroth in September of the year previous. She then noticed that the fingers became dead and pale after washing in cold water. The tip of the index finger of the right hand soon became very painful, remained hard for a time, and finally mortified. The gangrene terminated in necrosis of the unguis phalanx. The middle finger of the same hand was next attacked with inflammation resembling paronychia, which did not extend beyond the radial half of the bed of the nail, and terminated in the exfoliation of small, dry, parchment-like crusts. A year later the index and middle fingers of the left hand were similarly affected, at this time all the fingers of each hand being cold and pale.

Dr. Charles K. Mills³ reports a case of "vaso-motor and trophic affection of the fingers," which evidently belongs to the chronic and recurrent form of "local asphyxia," and which he believes to be unique.

Under the head of Chronic Vaso-Motor Hyper-Irritation, Dr. A. M. Hamilton⁴ describes an affection due to a "temporary spasm of the muscular coats of the small vessels of some limited spot, the site being usually a part of the hand." "The peculiarity is the limited blanching and coldness coming on without assignable cause, and finally subsiding, to reappear perhaps after an uncertain interval," the fingers being chiefly affected—"evidently our local syncope."

Dr. S. Weir Mitchell⁵ gives a collection of cases illustrating a form of vaso-motor neurosis of the extremities, to which he gives the name erythromalegia.

A case quoted from Sir James Paget is evidently one of local asphyxia, brought on apparently by excessive use of cold baths.

It is quite evident that many of Dr. Mitchell's cases belong to the group of "local asphyxias," and that some are, on the other hand, "symmetrical congestions."

Dr. T. A. McBride reported last spring to the New York Neurological Society a case of *digiti mortui*, and is the only American writer whom I have consulted who distinctly recognizes the relation of this affection to local asphyxia and symmetrical gangrene.

Fischer⁶ report two cases, one following intermittent fever. The cheeks, ears, and nose were the parts affected. The patient was a man forty-two years old. A second case followed an attack of typhus fever. The writer gives several theories as to the origin of the disease, but inclines to that of Raynaud. A case, reported by Christian, of gangrene of both feet, following malarial fever, deserves to be mentioned in connection with these cases.

Drs. Stewart and Holton⁷ report a case of symmetrical gangrene caused by

¹ Wiener medizinische Wochenschrift, No. 23, 1878.

² Surgical Pathology, page 302, first American edition.

³ American Journal of the Medical Sciences, October, 1878.

⁴ New York Medical Journal, 1874.

⁵ American Journal of the Medical Sciences, July, 1878.

⁶ Medical Record, May 11, 1878.

⁷ Chicago Medical Journal and Examiner, December, 1878.

chronic endarteritis, the name being obtained from Ziemssen's *Cyclopædia*, vol. vi. page 383, evidently not due to local asphyxia.

Dr. Bernard Henry describes a case of idiopathic gangrene of the four extremities, which, if not a specimen of the symmetrical disease of Raynaud, certainly merits mention here:—

The patient was a widow, forty-two years of age. She had led a very dissipated life, and had been treated for syphilis; had given birth to nine children, besides having had frequent abortions intentionally produced. She first noticed after washing a stinging sensation in the hands and feet. They were rendered more painful by scratching, and soon assumed a dusky red colour. When first seen the disease was thought to be purpura. In the course of two weeks the affected parts turned black and mortified. These were the hands and forearms for about a third of their length, and the lower third of the legs and feet. The tip of the nose and the skin over both patellæ and the cartilages of the ears were of a dark hue, and finally sloughed. There was great aversion to warm coverings. The gangrenous portions became mummified. The parts separated, and some were removed, but the patient died at the end of about two months. At the autopsy it was thought that there was some tendency to fatty degeneration of the heart, and apparently mitral stenosis; there was commencing cirrhosis.

A case very similar to this is reported by Dr. Thomas Camp¹ under the title, *A Case of Supposed Ergotism*. Both legs, all the fingers, the ala of the right nostril, and the upper part of the helix of each ear were the parts affected. There was a peculiar eruption coming and going on different parts of the body. The patient eventually recovered. Ergotism was suspected in both of these cases, but there was no direct proof.

Midwifery and Gynæcology.

When should we Ligature the Umbilical Cord?

A great deal has been written of late on this subject—the question being first raised by Dr. BUDIN, in a series of communications to *Le Progrès Médical*, for 1875–76, in which he stated that tying the cord immediately after the child is born deprives the latter on an average of 92.6 grammes of blood (more than 6 ozs.), which it would have received from the placenta if the ligature had not been applied till two or three minutes after all pulsation in the cord had ceased and the child had cried out lustily. Since the publication of these papers a number of experiments have been made with a view of proving or disproving this very startling statement. SCHÜCKING published the results of his observations in the *Berlin. klin. Wochenschrift*, 1877, Nos. 1 and 2. He thinks that almost the whole of the blood that is contained in the fœtal portion of the placenta is finally transferred to the infant. This transfer is effected by the pressure exerted by the uterine contractions on the placenta, and not by any aspiration caused by the expansion of the infant's thorax. Schücking estimated the amount of this "reserve blood," as he calls it, at from 70–150 grammes, and the time requisite for the transfer varies from a few to several minutes, being determined by the amount of pressure exerted by the uterus on the placenta. Hence he argues that unless we wish to deprive the fetus of nearly half of its proper supply of blood, we will

¹ British and Foreign Medico-Chirurgical Review, July, 1855.

not apply the ligature to the cord till some minutes after the child has been born; and if from any cause, such as *post-partum* hemorrhage, we are obliged to press off the placenta immediately, we should afterwards expel the blood from the placenta into the fetal circulation by compressing the placenta between the hands. He, at the same time, protests most strongly against treating the asphyxia of newly-born children by allowing some hemorrhage to take place from the cord. This treatment is founded on the supposition that the child's heart is already too full of blood, which must be got rid of at any price. This idea, Schücking thinks, is quite erroneous. For at the first effort the infant makes at inspiration the blood rushes into the thorax, leaving the extra-thoracic vessels empty. These are then filled by the "reserve blood" from the placenta; now if we tie the cord quickly and cut off this supply of "reserve blood," while at the same time we allow some blood to escape from the fetal end of the cord, we increase the anæmia, and, as a natural consequence, lessen the reflex sensibility of the medulla. As a direct consequence of this the intervals between each effort at inspiration become longer, till finally the breathing stops altogether.

With a view of still further elucidating this question, Prof. ZWEIFEL, of Erlangen, instituted a number of experiments to determine the exact quantity of blood that remains behind in the placenta when the cord is tied immediately after birth, and also when some minutes are allowed to elapse before the ligature is applied.¹ He found that the average quantity of blood remaining behind in the placenta when the cord was tied immediately after the child was born, was 192 grammes; but when the cord was not ligatured till after the placenta had been pressed off by the hand, the average amount of blood contained in the placenta was only 92.29 grammes. In other words, when the usual method is followed—viz., tying the cord as soon as all pulsation has ceased in it, and the child has cried out lustily—the child is deprived of 100 grammes of blood which it would have if the ligature were not applied till after the placenta had been pressed off. It is also well known that all children lose weight for some days after birth, the amount lost being estimated at an average of 220 grammes; but Prof. Zweifel found that the average amount of this loss, when the ligature had not been applied till after the expulsion of the placenta, was only 156 grammes.

Dr. LEOPOLD MEYER,² of Copenhagen, has repeated the experiments of Prof. Zweifel, but has arrived at very different conclusions. He found the following results in five cases when the cord was tied late—i. e., after the expulsion of the placenta:—

Weight of the placenta.		Blood contained.			} Average, 15.07 per cent.
1.	502 gr.	70.34 gr.	or 14.01	per cent.	
2.	527 "	85.5 "	" 16.21	" "	
3.	600.5 "	104.36 "	" 17.38	" "	
4.	426.5 "	56.41 "	" 13.23	" "	
5.	496 "	72.04 "	" 14.52	" "	

The other cases, or those where the ligature was applied early, he divides into two classes—(a) where the ligature was not applied till after the cessation of the pulsation in the cord, and (b) where it was applied as soon as the children were born.

In three cases of class (a) the results were as follows:—

Weight of the placenta.		Blood contents.			} Average, 17.25 per cent.
6.	737.5 gr.	96.69 gr.	or 13.11	per cent.	
7.	458.5 "	79.71 "	" 17.39	" "	
8.	600 "	127.57 "	" 21.26	" "	

¹ Centralblatt f. Gynækologie, 1878, p. 1.

² Ibid., p. 220.

And in the same number of cases of class (b):—

	Weight of the placenta.	Blood contents.	
9.	610 gr.	125.4 gr.	or 20.56 per cent.
10.	494.5 "	91.93 "	" 18.59 "
11.	657 "	102.6 "	" 15.62 "
			} Average, 18.26 per cent.

If we take the average of the last six cases we get 17.76 per cent., making the difference between the cases ligatured late and those ligatured early only 2.69 per cent. of the weight of the placenta; or if we take the average weight of the placenta as 600 grammes, this would give 16 grammes of blood in favour of the cases that were ligatured late. Thus, though he agrees with Zweifel that the fœtus receives more blood if the cord is tied late, he differs most seriously with him as to the exact amount thus gained.

In the *Centralblatt für Gynæcologie*, 1878, p. 409, Dr. M. HOFMEIER, of Berlin, draws attention to the *a priori* improbability of Zweifel's statements—viz., that by the ordinary method of ligaturing the cord the child loses 100 grammes of blood, the total amount of blood in an average child of 3300 grammes being only 175 grammes. Through the goodness of Prof. Schroeder he was enabled to make some experiments with a view of throwing some light, if possible, on this subject. The method adopted was to place the child the moment it was born, and before the cord was tied, upon a sensitive weighing machine, to note its weight then, and also the increase or diminution in its weight after some minutes had elapsed. The number of cases in which he made the experiment was 32, and the result was that there was an average increase in weight which amounted to 63.6 grammes. This increase in weight, he considers, cannot be due to anything but the extra amount of blood that has during the interval entered the fœtal circulation from the placenta.

A more difficult question to answer is—What benefit or use is this immense quantity of blood to the fœtus? It is either superfluous, in which case it is soon got rid of by disintegration of the red blood corpuscles and absorption of the serum; or it is most useful, in which case it must be looked on as "reserve blood," and as such must tend to lessen the amount of loss of weight which such children would otherwise suffer after birth. He concludes, from the results of a number of weighings that were undertaken with the object of answering this question, that children whose cord was ligatured late—i. e., after the expulsion of the placenta—lost 1 per cent. less of their entire weight than other children. This in a child weighing 3303 grammes would amount to 33 grammes, which represents a very considerable increase of blood and strength; and he has found, moreover, that such children begin to gain flesh from one-third to one-half a day sooner than the others.

Dr. MAX WIENER publishes the results of some experiments that he has made on this subject in the *Archiv. f. Gynaekologie*, B. xiv, p. 34, which in the main agrees very closely with those obtained by a very similar method by Meyer. He remarked in the course of his experiments that the quantity of blood that remained in the placenta was very variable even in the same class of cases. This difference could not be put down to the time that elapsed before the cord was tied, nor to the amount of uterine contraction, nor to the development of the child. He thinks, therefore, that this great difference in the amount of blood that remains behind in the placenta in almost similar cases must depend on the different ratios that often exist between the size of the child and the size of the placenta, and, therefore, between the amount of blood in the child and that contained in the placenta. Thus we may find two well-developed children each weighing 3000 grammes, while the placentæ weigh 600 and 400 grammes

respectively, and consequently the amount of blood found in each will be proportionate to the size of the placenta and not to the weight of the children.

Dr. LEOPOLD MEYER publishes some further observations on this subject in the *Centralblatt für Gynaekologie*, for April 26, 1879, which lead to conclusions directly opposed to those of Hofmeier. The latter found that children whose cord was tied late lost 1 per cent. less of their total weight during the first few days of their existence, and that they began to gain weight from one-third to one-half a day sooner than those whose cord was tied immediately after birth. Meyer has weighed 40 children—in 20 of them the cord was tied early and 20 late. The average weights are as follows:—

Average weight after birth	Cord tied late.	Cord tied early.	Difference.
	3203 gr.	3268 gr.	65 gr.
1 day	3128 "	3188 "	60 "
2 days	3013 "	3069 "	56 "
3 "	2990 "	3085 "	95 "
4 "	3054 "	3134 "	80 "
5 "	3094 "	3192 "	98 "
6 "	3141 "	3233 "	92 "
7 "	3181 "	3287 "	106 "
8 "	3221 "	3310 "	89 "
9 "	3261 "	3353 "	92 "
10 "	3277 "	3383 "	106 "

The difference here shown in favour of the cases where the cord was tied early depends, Meyer thinks, on the original weights of the children; and if all children who weighed above 3500 grammes be left out of consideration, the results in both series are almost exactly identical. Hence he concludes, contrary to the opinion of Porak, Budin, Schlücking, Zweifel, Hofmeier, and Riebemont, that the time that is allowed to elapse between the expulsion of the child and tying the cord has no effect—or, at all events, in comparison to other influences, has next to no effect—on the subsequent weight of the child. He further found, contrary to the results that Hofmeier brings forward, that a child whose cord was tied early did not subsequently lose so much of its weight as one whose cord was ligatured late. Hence tying the cord late does not increase to any great amount the quantity of blood in the fetal circulation, and the results that have been obtained by weighing children immediately after birth and then again a few minutes later are founded, he thinks, on some error due to traction on the cord or some other cause.

In France this question has also been keenly debated ever since Dr. Budin first published the result of his investigations. Dr. CH. PORAK contributed a most exhaustive article on the subject to the *Revue Mensuelle de Méd. et de Chir.* for May and June, 1878. He agrees with Dr. Budin as to the amount of additional blood that enters the infantile circulation when the cord is tied late, but thinks that this extra blood, far from being any advantage to the infant, as Dr. Budin thinks, is rather positively injurious; for such children are, he says, much more subject to infantile jaundice and to the various effects of plethora, such as hemorrhage from the stomach, bowels, and vagina, and he adduces cases in support of this idea.

The *Annales de Gynécologie*, for February, 1879, contain a paper on this subject, by Dr. ALBAN RIEBEMONT, the value of which, from a scientific point of view is, however, greatly lessened by the violent polemic tone that pervades it throughout. He takes Dr. Porak very severely to task not only for his facts, but also for his logic and conclusions. He sums up his paper as follows:—

1. By ligaturing the cord late the infantile circulation receives on an average an addition of 92 grammes of blood (Budin).

2. This blood, which is contained in the placental vessels, is most necessary for the full establishment of the infantile circulation.

3. The blood is drawn into the infantile circulation chiefly by the suction power exerted by the expansion of the chest walls (Budin), the pressure exerted by the uterus on the placenta (Schücking, Porak) having no considerable effect.

4. In cases of asphyxia where the child has a bluish hue the cord ought not to be immediately tied, nor should any hemorrhage be permitted from its fetal extremity.

5. Ligaturing the cord late does not expose the child to the smallest immediate or ulterior danger.

6. The infant is thereby placed in the most advantageous circumstance possible for its development; it loses less weight, and regains what it has lost both sooner and quicker than if the ligature be made immediately.

7. The expulsion of the placenta is thereby rendered easier, and there is less resistance offered to its escaping through the cervix (Budin, Schücking).

8. He agrees with Hofmeier, Zweifel, Schücking, and Budin, that the cord should not be tied till the pulsation in it has entirely ceased.—*Dublin Journal of Medical Science*, June, 1879.

The Presentation of the Posterior Parietal.

Dr. J. VEIT contributes to the *Zeitschrift für Geburtshülfe und Gynäkologie*, Bd. iv., s. 229, a learned paper on presentation of the posterior parietal, in which he criticizes the views already put forward by Litzmann on this subject. He disagrees with Litzmann in his explanation of the mechanism, when the latter says that delivery is spontaneously effected by a rotation of the head round its antero-posterior axis, the anterior parietal descending behind the symphysis pubis, and the posterior ascending in front of the sacral promontory. Dr. Veit maintains that there is no such ascent of the posterior side of the head. He holds that when the case is terminated by natural efforts, the head is pressed more and more down, and compelled to rotate round the promontory of the sacrum as a centre; the perpendicular diameter of the head becomes thus the half-diameter of a circle, whose centre is at the promontory of the sacrum. Whether the delivery is possible or not depends upon the degree of adaptation between the perpendicular diameter of the head and the conjugate diameter of the inlet of the pelvis. If these are nearly equal, spontaneous delivery, according to the above mechanism, is possible. Dr. Veit thinks Litzmann was led into error by finding, as the posterior parietal bone was rotated backwards and downwards, that it was more difficult to reach it than before rotation commenced. This difficulty he explained by assuming an upward advance of the posterior parietal, falling into a mistake precisely analogous to that by which Nægele originally assumed the deeper position of the anterior parietal in normal labour. Dr. Veit thinks, also, that when Litzmann describes three distinct degrees of this presentation, viz., 1st, When the sagittal suture lies slightly in front of the middle line of the pelvis; 2d, When the sagittal suture lies close behind the symphysis pubis; 3d, When only the posterior parietal bone can be felt, he is merely describing different stages of the same presentation, the original presentation of the whole of the posterior parietal or Litzmann's third degree passing successively into No. 2 and No. 1 in the process of spontaneous delivery. Dr. Veit also describes a bulging of the lower surface of the head, a flattening of upper, and a degree of flexure of its perpendicular axis under the combined force of the pains, and of the resistance of the pelvic brim, as a preparation for the rotation movement being completed. He has also noticed that in these cases the posterior parietal is found to project greatly at the sagittal suture, in front of and overlap the ante-

rior parietal, instead of as usual being overlapped by the anterior parietal. As observers of displacement of the cranial bones during delivery have been wont to notice that this particular condition occurs in about 20 per cent. of all vertex cases, and as this ratio is about the percentage in which Litzmann has observed presentation of the posterior parietal in flat pelvis, Dr. Veit is inclined to believe that the overlapping of the posterior parietal over the anterior may be chiefly occasioned by this peculiar presentation. Another important peculiarity which Veit has observed in connection with this presentation is enormous dilatation of the lower uterine segment or of the cervix at its posterior aspect, owing to the oblique manner in which the uterine contractions are brought into action when the head and trunk are placed not in one line, but are inclined at an angle to one another. On one occasion this dilatation was so marked, that the firmly-contracted anteverted uterine fundus and body containing the breech of the fœtus were mistaken by him for a large fibroid attached to the anterior wall of the uterus. It was only after delivery by version that he observed his mistake. This condition can only be made out with certainty by carefully-combined internal and external examination. As to treatment, Veit is not inclined to trust much to rectification of the position and the use of forceps, as Litzmann proposes, but he would in a difficult case rather turn early.—*Edinburgh Med. Journal*, Sept. 1879.

Nervous Vomiting in Pregnancy cured by Electricity.

Dr. da VENEZIA relates in the *Giornale Veneto di Scienze Med.* (January, 1879) a case of chronic nervous vomiting in pregnancy which was cured by electricity. The patient was a young woman aged 24, in the seventh month of her first pregnancy. She had been suffering for the last two years from frequent attacks of vomiting after food, which had been so frequent during the last month that she had become greatly reduced in strength. The usual therapeutic agents were then employed; but, as no relief was obtained through them, the author resolved to try electricity. A faradic current of moderate strength was used, one of the rheophores being applied to the side of the neck along the course of the vagus nerve, and the other to the epigastrium. After the first sitting, the patient felt better; and after the fourth the vomiting had entirely ceased. The patient had six sittings of five minutes each, and after eighteen days she left the hospital cured and able to retain her food. The author draws attention to this fact, because electricity has not yet become much used in the vomiting in pregnancy, and also because it tends to confirm Professor Semmola's observations concerning its remarkable effects in nervous vomiting. Semmola, however, always uses the constant current.—*Brit. Med. Journ.*, Sept. 27, 1879.

The Lactosuria of Lying-in Women.

Dr. P. KALTENBACH contributes a long and interesting paper upon this subject to the *Zeitschrift für Geburtshülfe und Gynäkologie*, Bd. iv. s. 163. After a lengthened historical résumé of the various and frequently contradictory opinions hitherto held upon this subject by the authors who have studied it specially, Kaltenbach is led to support out and out the deductions of Hofmeister, "that in the urine of women giving suck there is demonstrable the existence of a reducing substance, which from its behaviour towards the ordinary tests for sugar may be looked upon as sugar, and that this substance bears a certain relation to the secretion of milk." But Kaltenbach, in the paper we are considering, carries the question a step further, and believes that he has demonstrated that that substance is really sugar, and not merely a substance which responds to the ordinary sugar

tests. By a long process of precipitations, washings, etc., Dr. Kaltenbach was able to separate the reducing substance in a crystalline form. The crystals were colorless, transparent, presenting straight rhombic prisms with ends obliquely cut off, insoluble in alcohol and ether, easily soluble in cold water. At a temperature of about 150° C. they became brown, and gave forth an odour of caramel. Examined in the saccharometer, the solution exhibited a powerful right-handed rotation. Boiled in diluted sulphuric acid the crystals became directly capable of fermentation, *slightly warmed with diluted nitric acid they gave mucic acid*. Repeated experiments convince Kaltenbach that this reaction is able to detect infallibly the slightest amount of sugar. He regards it, therefore, as proved beyond a doubt that there does exist milk sugar in the urine of lying-in women. From another series of careful observations the author finds that the amount of sugar in the urine varies with the condition of the breasts. If they are tense or congested there is found to be an increase of sugar in the urine. He thus is led to give out and out support to the views of du Meulins, du Sinétz, and Spiegelberg on this subject, and maintains that the explanation of the phenomenon is to be found in the intensity of the physiological congestion of the excretory ducts of the milk glands. The amount of this congestion conditions the resorption of milk and its separation in the urine. Finally, our author states that the relation between congestion and the amount of sugar contained in the urine may be most plainly demonstrated in the cases of such lying-in women whose children were either born dead, or died during the period of lactation. The quantity of sugar of milk is especially considerable in the uterine of patients, in whose cases on account of mastitis, or of badly developed or shrunken nipples, or of other puerperal processes, the application of the child to the breast was retarded, and its artificial nourishment rendered necessary, because in them the conditions for the establishment of great obstructive congestion were fulfilled.—*Edinburgh Med. Journal*, Sept. 1879.

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Fibroid Tumour Expelled under the use of Subcutaneous Injections of Ergotin.

Professor ALEXANDER R. SIMPSON, at a recent meeting of the Obstetrical Society of Edinburgh (*Edinburgh Med. Journal*, Sept. 1879), read the notes of a case of fibroid tumour expelled under the use of subcutaneous injections of ergotin. He remarked that further experience had confirmed the favourable impression he had formed as to the value of Hildebrandt's method of treating certain cases of fibroid tumours of the uterus by means of hypodermic injections of ergotin. He exhibited the fragments of a tumour which had been expelled from one of his Infirmary patients who had been thus treated. Under the microscope the masses were seen to be myomatous in structure, and it was interesting to observe to what an extent the individual muscular fibres were in process of fatty degeneration. The following is the history of the patient: Mary M., 54, a widow, residing at West Calder, admitted 23d February, examined 25th February, 1879. *Complaints*.—Swelling in lower part of abdomen; bloody discharge; pain in the back; painful and frequent micturition.

History of Present Illness.—Patient had always good health till about seven months ago, when she noticed the swelling in the lower part of the abdomen, which caused her considerable discomfort, especially on making water, which she had to do at short intervals. *General Appearance*.—Patient is of average height and development; is an albino; not markedly anæmic. *Menstrual History*.—Menstruation began when patient was at the age of 14; was always irregular; recurring at intervals varying from three to six weeks; lasting about two or three days at each time. Has been in abeyance only during pregnancy and nursing.

Seven months ago the discharge at each period became excessive, and it was at this time that she first observed the tumour. For the last three weeks there has been a constant and considerable loss of blood, which has greatly weakened the patient. *Obstetric History*.—She was married at 17; has had nine children, all born alive, at full term, with normal labours. Last child born three years ago.

Abdomen.—On inspection, walls flaccid, strise of previous pregnancies; prominence can be seen above pubes in the middle line, extending about halfway to the umbilicus. *On Palpation*.—A hard resistant tumour of rounded form and smooth surface is felt in the middle line above the pubes, measuring $5\frac{1}{2}$ inches transversely, and 4 inches vertically; the hand cannot be passed between the tumour and the pelvis in front. *Percussion*.—Dull note corresponding to area mapped out on palpation. *Auscultation*.—Negative results. *On Vaginal Examination*.—Ostium vaginae patulous; vaginal walls smooth and moist. Vagina roomy. Cervix easily reached; looks downwards and backwards. In anterior and right lateral fornices a hard mass is felt. Os dilated admits tip of forefinger; fissured transversely; escaping from it some soft gelatinous discharge. The finger can be forced through the os externum, and touches a body on the left and anterior wall. *Bimanually*.—The uterus moves with the tumour. Distinct thrilling pulsation is felt in the anterior part of tumour, which projects into vagina. The sound passes $3\frac{1}{2}$ inches to the left side.

Diagnosis.—Submucous fibroid tumour of the uterus.

Treatment.—Rest in bed.

R.—Ergotin, $\mathfrak{z}\text{ij}$; Chlor. hydr., $\mathfrak{z}\text{j}$; Aquæ, $\mathfrak{z}\text{ij}$. M. Sig.—Sixteen minims to be injected subcutaneously every second or third day.

Further progress.—On 6th March all discharge of blood ceased.

From the 10th of March to 1st April she had great pain in the uterus; her temperature during that time ranging from 98.4° , 100.0° , 102.0° , being generally higher in the evenings. She got morphia by the mouth frequently to procure sleep.

April 2. Part of the tumour about the size, when pressed together, of a hen's egg, came away to-day.

3d. M. T. 99; E. T. 100. Vaginal injections of tepid solution of carbolic acid and hip-baths to arrest the fetid discharge.

5th. Another part of the tumour came away to-day. Part in a sloughy condition. Great fetid discharge. E. T. 103.

7th. Pain ceased.

15th. Pain in the uterus. Small piece came away to-day, after which pain quite ceased.

Since the last part of the tumour came away there has been a great deal of white discharge, but it entirely ceased on 24th April. There is now no pain, and the temperature is quite normal.

May 6. On examination, tumour much diminished in size, but still larger than normal uterus. There are one or two irregular nodules on the left side under the peritoneum. A small almond-shaped swelling (the left ovary) is felt in the left side of the posterior fornix.

Dr. BELL, of Glasgow, had a good opinion of the effects of ergot in uterine fibroids, and mentioned a recent case in which a tumour had been expelled under its use in a state of fatty degeneration. He was especially anxious to make known the method he employed in administering the ergotin, which was in the form of suppository. He had found it quite as efficacious as the subcutaneous injections, and quite unattended with unpleasant results, as often happened with the subcutaneous method.

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DECEMBER, 1879.

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Anatomy and Physiology.

On the Growth of the Heart and Great Vessels.

From 350 estimations of the volume of the heart, and 620 measurements of the vessels, BENEKE concludes (Virchow's *Archiv*) that: 1. The growth of the heart is greatest in the first and second years of life; by the end of the second year the heart has doubled in size. In the next five years its growth is slower, and but a gradual increase commences after this period, up to the age of 15, when it is two-thirds greater than it was at 7 years of age. After puberty the heart grows more rapidly, and, in proportion to the sexual development, increasing to two-thirds its original volume in the succeeding five years. After this it grows more slowly, but continues to enlarge up to 50, increasing about 1 cubic centimetre per annum, and subsequently a diminution occurs, which may be regarded as senile atrophy. 2. The heart is the same in children of both sexes up to puberty. After which the female heart remains the smaller, being from 20 to 30 cubic centimetres less. 3. All the great vessels continue to increase in size from the beginning of life to its end. 4. This increase in size of the great vessels is relatively greatest in the first years of life, but, like the heart, their growth is quickened at puberty. 5. The pulmonary artery up to the age of 45 is wider than the descending aorta. After this the relation changes, and the descending aorta gradually becomes the wider. 6. Up to puberty the common carotid is not noticeably wider than the common iliac and subclavian, but after that period the latter are much the wider. 7. The vessels in the female are throughout life narrower than in the male. Previous to puberty the number of observations have been too small to make this quite certain. 8. The vessels are relatively narrowest in proportion to the length of the body at puberty. Taking this, together with above described development of the heart at puberty, he infers that the blood pressure is relatively highest at that period. 9. Relatively to the length of the body, the pulmonary artery in the female at puberty is wider than in the male. 10. The pulmonary artery and descending aorta increase relatively more during life than the iliacs, subclavians, and carotids. He infers from this that, as life advances, the blood pressure must fall in the aorta, while it rises in the peripheral arteries. 11. Immediately after birth the aorta and pulmonary artery increase, while the iliacs decrease in consequence of the cessation of the foetal circulation. 12. The blood pressure appears to play an important part in determining the widening of the vessels. 13. The maxima and minima circumferences of the great vessels vary to an extraordinary degree in different persons, especially as life advances; but these may be explained by differences in the length of the body. There also seems reason to believe in great differences in the total blood

mass in different individuals. 14. Cases of cancer seemed to have wider vessels than were found in otherwise diseased or healthy persons.—*London Medical Record*, Oct. 15, 1879.

Origin of the Red Blood-Corpuscles.

Notwithstanding the attention that has been bestowed upon the subject, the source and mode of development of the red blood-corpuscles is still shrouded in much darkness. That they really do grow is sufficiently shown by the rapidity with which even large losses of blood are repaired, and it seems to be generally admitted that they proceed from the white corpuscles in which some kind of metamorphosis has taken place; the white corpuscles themselves being the product of cell-growth in the ductless glands, in the lymphatic glands, the medullary tissue of bones, and in the connective tissue of various organs. The chief difficulty in the way of this explanation of the origin of the red corpuscles is the comparative absence of intermediate stages, especially in the higher vertebrata, between the very well characterized, actively moving, nucleated, and spheroidal white corpuscle, and the non-nucleated, biconcave, and motionless discoid red. For although white corpuscles have been seen with a tinge of red, more or less flattened, and with other features approximating them to the red corpuscles, the number of them is comparatively small, and scarcely sufficient to account for the constant succession of new red corpuscles, which we must suppose are being constantly added to the general mass of blood. In addition to this, the white corpuscles appear to have functions of their own, as shown by their passing through the walls of the vessels, and wandering through the tissues, where they retain, for some time at least, their peculiar characters.

Recent observations by M. Hayem have opened up new views on this point, and, from careful and long-continued microscopical research, he has been led to admit a third form of corpuscle, the hæmatoblast, to which the red blood-corpuscle owes its origin. His observations have been conducted both on the higher and the lower forms of vertebrata, and the series that we propose at present to notice, and an account of which he has just published in the *Archives de Physiologie*, deal with the development of the blood-corpuscles of those vertebrates that have nucleated red corpuscles, the pyrenæmata of Gulliver, or ichthyopsida and sauropsida of zoologists. On exposure of the mesentery or tongue of a frog to the air, the circulation becomes troubled and slower, and it is then easy to see, amongst the red corpuscles, colourless corpuscles, very different in aspect from the white corpuscles. These bodies are borne along with the current of the red corpuscles, without any tendency to rest in the quiescent layer, and, instead of presenting the spheroidal form of the leucocytes, are elongated, slightly flattened, and already somewhat discoid. When seen in profile they appear as ovoid bodies, with one end prolonged to some extent. These are the young red globules or hæmatoblasts. They are not deficient in elasticity or suppleness, since they can make their way through a narrow passage, with some change of form, resuming their natural aspect on being relieved from pressure. Their surface is smooth, homogeneous, slightly cloudy, and with a less silvery reflex than the white corpuscles. They sometimes present a central darkish spot, occupying the position of a nucleus, near which are one or two bright granules. If a specimen of recent blood be examined on the warm stage, the hæmatoblasts retain for some seconds the appearance above described; but they soon become remarkably viscous, and, whilst adhering to the slide at some point, they are stretched by the movement of the plasma, sometimes to an inordinate length, or, if they come into contact with one another, they stick together, and become a kind of centre around which the red corpuscles dispose themselves concentrically. They then quickly become

altered in appearance, and lose their distinctive features. If it be required to examine them under the microscope outside the vessels, the stage, instead of being warmed, should be cooled to freezing point, and they then retain their characters for several hours. Even then, however, after a time, they become prickly with short pale processes, and lose by solution or fragmentation a part of their disk, the nucleus at the same time becoming more sharply defined and more granular. They preserve their characteristic features best in iodized serum, and when measured they are found to vary considerably in size, some being much smaller than the ordinary white corpuscles, others larger and very elongated, whilst many have a very distinct yellowish tint from the presence of hæmoglobin. The larger they are the more resistant are they to the action of saline and other solutions. The smaller specimens soon become pale and indistinct in water, and then disappear altogether, the nucleus first becoming spherical and very large. They can be rendered insoluble by the addition of solution of mercury chloride of a particular strength, the formula of which is given.

M. Hayem dwells on the relation that the hæmatoblasts, after withdrawal from the bloodvessels, bear to the formation of fibrin, and shows how the delicate filaments observed in the coagulum of frogs' blood are, in part at least, derived from the processes of these peculiar structures.

Whether M. Hayem's results be corroborated by other observers or not, it is quite evident, both from his researches and from those of M. Losterfer and Dr. Richard Norris, that the microscopical characters of the blood have not been fully mastered, and that this fluid still presents an inviting field to the naturalist, which has the advantage of being always accessible and easily worked.—*Lancet*, Oct. 11, 1879.

Materia Medica and Therapeutics.

On Myotic and Mydriatic Agents.

At the late International Medical Congress, at Amsterdam, Dr. DOYER, of Leyden, presented a note on this subject, with the following conclusions:—

1. Notwithstanding the relation which exists between the size of the pupil and the power of accommodation, both functions are independent of each other.

2. Comparison of the results of experiments shows that the power of various drugs for dilating the pupil is different, and that for pilocarpine, eserine, gelsemia, atropia, daturia, and duboisia, it is in the proportion of $\frac{1}{250}$, $\frac{1}{8}$, $\frac{1}{16}$, 1, 2, 15.

3. The smallest dose of duboisia that acts on the pupil is 0.000000005 gramme.—*Archives Gén. de Médecine*, Nov. 1879.

The Local Antagonism of Atropia and Pilocarpine.

Some interesting experiments on the local antagonism of atropine and pilocarpine were recently communicated to the Académie des Sciences by M. Strauss. If one or two centigrammes of nitrate of pilocarpine are injected beneath the skin of a man, at the end of from two to five minutes the skin covering the injected liquid reddens, and then is covered with very fine droplets of sweat, which appear first, not at the point of the injection, but at the circumference of the area, and extend concentrically to the centre, finally covering the whole area. This local sweat occurs two or three minutes before the salivation, and five or eight minutes before the general perspiration, and it is the more pronounced the

greater is the number of sudoriparous glands at the spot; the best places being the forehead or front of the sternum; the back of the arm, where injections are most frequently made, being the least favorable, and for this reason, probably, the phenomenon has escaped observation. Reducing the dose, the effect of the injection becomes ultimately strictly local, without the slightest general sweating. Thus, at will, this or that part of the skin may be made to sweat, or lines of sweat may be produced on an otherwise dry skin. The dose with which the effect is purely local is from one to four milligrammes.

By means of subcutaneous injections of atropine the opposite effect may be obtained. If, when a person is in full sweat from the effect of pilocarpine, very minute doses of sulphate of atropine are injected under the skin, the perspiration lessens at the spot almost immediately, and in a few minutes it is totally suppressed. Thus dry areas and lines may be at will produced upon the moist skin. In order to ascertain that the arrest of the perspiration is really the result of the atropine, and not of the mere injection of liquid, an equivalent volume of pure water was injected at certain spots, but without causing any arrest of the perspiration. The dose of atropine which will arrest the sweating is extremely small. One-millionth of a gramme of atropine never failed to produce it in man, and in the cat one-hundred-thousandth of a gramme was sufficient. The sweating skin is thus a test of atropine of extreme delicacy. The sensibility of the sudoriparous glands to atropine is greater even than the iris, since the millionth of a gramme of atropine produces no appreciable dilatation of the pupil.

If the skin is frozen with ether-spray, and one or two centigrammes of pilocarpine are injected, the local sweating does not ensue, in spite of the occurrence of general perspiration. Even after the freezing has passed off, the local sweating does not occur, or is brief and slight. Extreme cold appears thus to act as atropine, paralyzing the sweat-nerves, a paralysis which persists even after the local cold and anæmia have passed away. This fact is of great interest in connection with the well-known pathological effect of the arrest of sweat by cold.

The experiments of Luchsinger, confirmed by Vulpian, have shown that in the cat an injection of one or two milligrammes of atropine arrests the sweating caused by a centigramme of pilocarpine, but that if another centigramme of pilocarpine is injected under the skin of one of the paws, the sweat will reappear upon this paw, and nowhere else. In man Strauss has ascertained the same fact. After two centigrammes of atropine had been injected, two milligrammes of pilocarpine were injected half an hour later on another region of the skin. Neither salivation nor general sweating occurred, but merely a local perspiration, very persistent, however, at the point of injection. An attempt was made to ascertain what quantity of atropine rendered large doses of pilocarpine locally inefficacious. In the leg of a strong man six milligrammes of sulphate of atropine were gradually injected, and then, in a single injection, four centigrammes of pilocarpine, without causing even local sweating. In a young cat the same result was obtained after injecting under the skin of the belly three milligrammes of atropine gradually. The subsequent injection into a hind paw of one and a half centigrammes of pilocarpine, and the galvanization of the sciatic after the method of Luchsinger, caused no perspiration upon this paw.—*Lancet*, Sept. 27, 1879.

Medicine.

Immediate and Permanent Treatment of Disease.

At a late meeting of the Harveian Society of London (*British Med. Journal*, Nov. 1, 1879) Dr. MILNER FOTHERGILL read a paper on this subject, in which he pointed out how in many cases the treatment which gave immediate relief was not that to be continued in the permanent interests of the patient. He instanced first the free use of opium in the hacking cough of phthisis, and in chronic bronchitis, which gave immediate relief, but did harm eventually. Then, in the diarrhoea, due to impacted masses in the rectum, astringent mixtures might give immediate relief, but they were not curative, while removal of the masses was. So, too, in neuralgia, the injection of morphia eased the pain for the time, but, if continued, was more likely to confirm it than to cure it. Likewise in dyspepsia, of reflex origin, its cure depended upon the removal of the exciting cause. In gout, the application of cold, or of leeches, gave instant relief; but he quoted Garrod in illustration of the evil consequences which followed such treatment. But of all instances of the conflict betwixt the present and the permanent treatment of disease, that furnished by endocarditis was, he said, the most striking. It was the rule to give tonics as soon as possible, and to get the patient up; but, he contended, the proper plan of treatment was to keep the patient flat in bed for some days after all evidence of active mischief had passed away. The growth of connective tissue in the valve-curtains, which was lighted up by the inflammatory storm that passed over the endocardium, persisted some time after the endocarditis itself was over; and it was the mutilation, caused by the contraction of the neoplasm which was chiefly to be dreaded. Consequently, the true line of practice was to reduce the strain upon the inflamed valve-curtains by complete rest, and the administration of agents which lowered the blood-pressure within the heart and arteries. The more the connective tissue growth could be limited at the outset, the less the future mutilation of the valves.

The Treatment of Chlorosis.

The experiments which have been carried on by M. HAYEM for several years, show that there is in chlorosis not only a diminution of the number of red corpuscles, but that there is in addition an individual change in the corpuscles themselves. This modification is owing to the fact that the red corpuscles possess an insufficient quantity of hæmoglobin. Iron acts by preventing this individual alteration in the corpuscle. To this statement it may be objected that compounds of iron are only of use to the organism indirectly, by stimulating the appetite. Chlorosis is generally accompanied by well-marked and obstinate anorexia. But it is understood that many of the preparations of iron stimulate the appetite, and it may therefore be asked whether chlorotic patients who take iron and recover their appetites are unable to assist in renewing not only the number but the quality of their red corpuscles. For the purpose of demonstrating this fact, M. Hayem, in conjunction with M. Regnault, has undertaken a series of experiments, in which insoluble preparations of iron, such as potassium ferrocyanide, which pass through the organism unchanged, were administered. The experimenters found that these preparations are absolutely incapable of assisting in the renewal of the blood. M. Hayem then adopted the plan of making his patients inhale oxygen. M. Demarquay first showed that this was one of the best methods for stimulating the appetite. M. Hayem caused his patients to inhale oxygen to the extent of ten litres a day at two or three sittings, and has thus obtained wonder-

ful results in regard to stimulation of the digestive functions. Chlorotic patients who could scarcely be induced to eat raw innutritious vegetables became perfectly ravenous after some days of this treatment, and ate five or six of the hospital rations in the course of 24 hours. The quantity of urea eliminated in the same time rose from 10-12 grams up to 35-40 grams per diem. The general health was improved, and the body weight increased, but the patients retained their characteristic colour, and still remained chlorotic. In fact, the examination of the blood showed that a marked increase in the number of blood corpuscles had occurred, but that the essential alteration, that is to say, the insufficiency of hæmoglobin, still remained. The patients under these conditions, therefore, made a large number of corpuscles, which were no longer normal. After the expiration of two or three months of this treatment the scarcity of colouring matter in the red corpuscles as shown by the microscope contrasted markedly with the improvement in the digestive functions and in the general health, and it was only necessary to stop the inhalation of oxygen to see the patient return to his former wretched condition. To complete his experiments it only remained for M. Hayem to combine the inhalation of oxygen with the administration of soluble preparations of iron. The red corpuscles were then not slow to recover their physiological properties, the beneficial results being hastened by the fact that under the influence of oxygen the alimentary canal is rendered more tolerant of the iron. From these results it may be concluded: (1) that soluble preparations of iron are alone capable of modifying that change in the red corpuscles which is the essential character of chlorosis. (2) In chlorotic patients affected with dyspepsia inhalations of oxygen should be considered as a beneficial adjuvant to the treatment by iron.—*Practitioner*, Nov. 1878, from *Le Concours Médical*, July 26, 1878.

Myxædema, or Universal Degeneration of the Connective Tissue of the Body.

At a late meeting of the Clinical Society of London (*Med. Times and Gazette*, Oct. 18, 1879), Dr. DYCE DUCKWORTH related this case. S. M., aged thirty-four, married for ten years, mother of three children, came to St. Bartholomew's Hospital in November, 1878, complaining of weakness and of failing health for two years previously. She first observed that her eyelids and face swelled; subsequently swelling was noticed generally about the body. Her voice had become altered and thick. A sister who accompanied the patient stated that her manner had become altered and her temper more sullen and irritable since her ailment began. Indeed, some of her friends believed, in consequence, that she had become intemperate in her habits. She was a well-grown woman, of large build, but had lost two stones in weight during the previous eighteen months. Her face was of peculiar aspect, and she wore a listless expression. The complexion was waxy, with some clear redness over the malar bones, and there were several moles about the chin and cheeks. The eyelids were puffy and œdematous, having the aspect so common in chronic forms of tubal nephritis. The hands were clumsy-looking and seemingly swollen about the backs, but no dints could be made in them; it was alleged that they felt numb and sleepy at times. There was no appreciable change in common sensibility, and pins could be readily picked up. On examination some general condition of xeroderma was found on the limbs more especially, but no ordinary œdema.

The first impression in this case was that there was some form of chronic nephritis present which would explain both the physiognomical aspect and the obvious swellings. The urine was found to be quite void of albumen, of specific gravity 1010, acid in reaction. The heart was natural. The tongue was clean, and protruded naturally. The uvula was observed to be swollen and œdematous.

looking. Appetite good; bowels usually constipated. The case was now regarded as one of that peculiar form of disorder described so well, and termed by Dr. Ord as "myxœdema," and other like instances of the disease were recalled to memory which had not been satisfactorily diagnosed. The family history afforded no clue to the nature of the case. The children were healthy with the exception of the youngest, which was very rickety.

The treatment consisted mainly of steel and cod-liver oil. On subsequent examinations the disorder was found to be making progress. The thyroid gland could not be felt, and a fatty cushion was found in the left supra-clavicular fossa. The face became more waxy and puffy, and the voice more slow and snuffling. The urine never was albuminous. The patient's manner was more sullen and reserved, and she was shy and resentful of clinical examination. Dr. Ord saw this case six months ago, and confirmed the opinion formed respecting it. It added one more to a series which have been, and still are, receiving careful study, and about which no doubt as to their true nature can now be entertained. Occurring only, so far as known at present, in the persons of women about middle life, the varying symptoms appear to be due to a gradually spreading mucoid degeneration of the intercellular tissue throughout the body, which thus shuts off full and prompt appreciation of peripheral and other nervous impressions. Dr. Duckworth promised to report further observations upon this case at a future time.

Dr. ORD then read some further observations on this disease. The paper gave the history and morbid anatomy of a second (fatal) case of this disease, first described by Sir William Gull as "a cretinoid condition supervening in women in adult life," and subsequently named by Dr. Ord "myxœdema." The patient was a woman, aged fifty-two, married, the mother of five children. Her illness dated from her last confinement, twelve years before. She had begun then to swell in the face and all over the body. As she gradually increased in size she had become lethargic, had difficulty in collecting her thoughts, had difficulty in walking and in holding up her head. When she came under observation, fourteen days before death, she presented in a very marked degree the appearances described by Sir William Gull and Dr. Ord in previous papers. The whole body was swollen, giving her the aspect of a person suffering from renal disease. The skin was translucent, dry, and very rough on all parts except the face. The eyelids were bulged, the lips, upper and lower, greatly swollen, and the *alæ nasi* much thickened. Each cheek presented a sharply-limited pink flush; the hands were spade-like, expressionless, and, with other extremities, were blue, by reason of feebleness of circulation. She spoke slowly and painfully, with leathery nasal intonation. Her movements were slow, and she halted quiveringly in her gait, but had no true paralysis, ataxy, or tremblings. The droop forward of the head, noticed in a previous extreme case, was remarkable, the pressure of the chin upon the neck actually interfering with deglutition. Her senses were essentially unimpaired, but her response was long in coming, her memory defective, and her thoughts slow. The urine was of average quantity, of rather less than average specific gravity, and contained a trace of albumen. The arteries were firm, and the heart enlarged but weak. The thyroid body was small. Having received bad news immediately after her admission to St. Thomas's Hospital, she fell into a lethargy which deepened daily, with intervals of feeble delirium till she died, on the fourteenth day. While under observation her temperature was very low; for twelve days the average was between 90° and 92°, on the thirteenth 88°, on the last day 77°.

At the post-mortem examination all tegumentary and surface parts of the body were found swollen; the thyroid body was reduced in size and form; the kidneys were very firm, not reduced in size, smooth on the surface, and not adherent to

their capsules, the cortical portion being somewhat narrower on section than normal; the liver and spleen were too firm; the heart was dilated and hypertrophied, weight twelve ounces and a half. The microscope showed in all parts a great increase of connective tissue. The fibrillar element was more abundant and more defined than normal; the interstitial mucus-yielding element was greatly increased in proportion and quantity; nuclei were larger and more numerous. This was best seen in the skin, the glandular organs, and in the coats of arteries. The connective tissue presented a strong resemblance to that of the umbilical cord, and suggested the idea of a retrograde degeneration. The encroachment of it on tissue and organs was apparently the cause of death. Five other cases, all in women between thirty and fifty, all married, were compared. All had low temperature; all had nervous weakness and lessened sensations; two, very advanced, had delusions. These two had traces of albuminuria; the rest, less advanced, gave no indications of renal affection. The symptoms and appearances being altogether of the same character as those observed in previous cases, Dr. Ord maintained that they showed the disease under consideration to be a substantive disease, and that they justified the use of the term "myxedema," as marking the cause of the symptoms and of the fatal termination.

Dr. GOODHART suggested that the overgrowth of connective tissue which was supposed to compress the nerves might also, in cretinism, in the same way affect the brain. But between sporadic cretinism and this malady there seemed to be this essential difference—that the former was congenital; the latter occurred in middle life only. Would it not in the latter case be so that the brain, having already received many impressions, would retain much of its mental food? He was rather inclined to suspect a kind of general mischief similar to *sclerose en plaque*.

Dr. Duckworth said that of course in his case there could be no pathological details, seeing the patient was yet alive. She was not easily managed, and had only been seen at intervals.

Dr. Ord said that in one of his cases he could give the history of the children. One seemed of unusual ability as a painter; others seemed muscular in a high degree; in none had any signs of the disease been seen, but then all were under the ordinary age for such symptoms to manifest themselves. True the prognosis was bad, but in no case did it seem to prove fatal under six, or usually ten or twelve years. No treatment seemed to do good. Neither in the brain nor spinal cord was there anything which could strictly be called sclerosis, though the connective tissue round about the bloodvessels was increased. He still held that padding around the nerve-fibres, and the consequent interruption of communication with the periphery, was a prime factor in the disease.

Sudden Death in Diabetes.

The sudden termination of cases of diabetes is so frequent, so well known, and withal so startling; the collapse from a condition of comparative wellbeing occurs so often without any previous warning; that even hypotheses which pretend to throw light upon these conditions, more especially if they contain some information holding out therapeutic indications, are welcome to the profession. Dr. JULES CYR, in the December and January numbers of the *Archives Gén. de Médecine* for 1877-78, has published a paper in which he details the account of thirty-two cases of sudden death in diabetes, collected from various sources. He considers that there are at least five different conditions to which these may be ascribed: 1. The formation of acetone in the blood under conditions nearly unknown—acetonæmia; 2. The accumulation of excessive quantities of sugar in

the blood—hyperglycæmia; 3. The retention of urinary solids or water in the blood—uræmia, dropsy of the ventricles; 4. Atrophy of the cardiac muscle; 5. Cerebral anæmia. It is probable that some at least of these may combine to produce the fatal result, while some have a more special and direct effect, and are capable of recognition during life. Of these thirty-two cases, twenty-one are stated to have died comatose; in a few the mode of death is not stated; in others there is no mention of coma; but this large proportion shows the relative frequency of this mode of death. In none of the cases in which necropsies were made, although these unfortunately were few, was there any anatomical change to account for death. Dr. Balthazar Foster has published a paper (*British Medical Journal*, January 19, 1878), in which he has urged the probability of acetonæmia being the cause of death in a large number of these cases. This theory he supports by quoting three cases from his own practice; in the first, no smell of acetone was noticed in the breath, but the blood of the patient, examined after death, was of a peculiar pale colour and creamy consistence; under the microscope, the blood-corpuscles were broken down into a granular material, which he subsequently found could not be artificially imitated by treating blood with acetone; in the other two cases there was a strong odour of acetone in the breath of the patients. Dr. Foster alludes to the objection which has been made that, in many cases, no odour of acetone is perceptible, and replies that a temperature of 100° Fahr. is necessary to volatilize acetone.

Kussmaul (*Deutsches Archiv für Klin. Medicin*, 14 Band, 1874) has gone very fully into this question of acetonæmia, and from his experiments concludes that it is not possible to believe in a theory of acute intoxication from acetone, but that chronic poisoning by this substance may so affect the nervous system as to render it liable to take on an acute form, just as chronic alcoholism may suddenly explode in delirium tremens. His reason for thinking so is, that such very large quantities of acetone are required to produce any physiological effect. He says that he was in the habit of prescribing acetone for phthisis, and often gave four to six *grammes* daily (in one case for six weeks) without producing any disagreeable effect upon the patients, who never complained of headache or giddiness, etc. In his experiments upon animals he injected as much as ten *grammes* of pure acetone within one hour beneath the skin of a dog, without producing intoxication, anæsthesia, or muscular enfeeblement; but with smaller doses he was able to produce these effects in rabbits. He especially remarks upon the extreme ease with which the odour of acetone could be detected in the breath of these animals; but it must be remembered that their usual temperature is somewhat higher than that of man. We can scarcely believe that acetone ordinarily, or even frequently, is capable of destroying the blood-corpuscles in the way described by Dr. Foster, for all Kussmaul's animals, without exception, even those in whom coma had been induced, recovered, which scarcely could have happened had the acetone produced those physical changes in the blood which Dr. Foster describes; it is at least probable that these appearances were *post-mortem*, perhaps due to a further development of acetone in the sugar-laden blood.

With regard to the treatment, Dr. Foster was successful in one case in which he administered two drops of carbolic acid every hour, combined with opium; he suggests salicylic acid or thymol; all these antizymotic substances being intended to check the fermentative change of sugar into acetone. If this conversion could be checked, the results of Kussmaul's experiments give us reason to believe that recovery might take place, but, unfortunately, a diabetic is not in quite such a favourable condition to resist the poison as healthy dogs and rabbits, and Kussmaul's suggestion of gradual impairment of the central nervous organs by chronic poisoning is only too probable. From reading Dr. Cyr's cases, it

appears that these deaths are far more frequent in people who have neglected to restrict their diet, while very commonly the fatal accidents have supervened upon some excitement and unusual physical exertion; a woman runs with her baby to escape a shower of rain, a man hurries to catch a train, another loses his omnibus and has to walk home. All these teach the old lesson, none the less useful for not being new, that the only hope of safety for a diabetic is in making his mode of life conform to those rules which have been framed by medical experience and confirmed by medical science.

An addition has been made to the pathology of this subject, and a sixth condition added to Dr. Cyr's list, by Dr. Hamilton's discovery of lipæmia and fatty embola in the pulmonary and renal vessels of a case which died under the care of Dr. Sanders. In their paper (*Edin. Med. Journal*, July, 1879) they describe the blood as presenting the same cream-like appearance noticed by Dr. Foster; on standing, it separated into two layers, the upper consisting of fat-globules and a finely granular precipitate, "evidently of an albuminous nature;" the lower stratum being unaltered blood corpuscles, with a few granules and oil-globules. In another case the blood was in a similar condition, and, on submitting it to analysis, only a mere trace of acetone was discovered; unfortunately in this case no microscopical examination of the organs was made.

These observations cast some doubt on the occurrence of acetonæmia; but we have seen that the causes of sudden death in diabetes are manifold, and in natural science we must be content to accept a plurality of causes. It may be that sometimes acetonæmia, sometimes lipæmia, produces the fatal result; or it may be, as Sanders and Hamilton have concluded, that acetonæmia is a myth, and lipæmia the sole condition. It is worth while remembering, however, that it is still open to doubt whether fat-embola can cause death. In their first case the dyspnœa was very slight, and urine was passed shortly before death; the latter fact strongly contradicting the hypothesis of carbonic acid poisoning.—*British Med. Journal*, Nov. 1, 1879.

Acute Affections of the Pons and the Bulbs.

EISENLOHR gives, in the *Arch. f. Psych.*, ix. page 1, the histories of eleven cases of acute affections of the pons and the bulbs, of which the following cases appear to us the most noteworthy, as they are accompanied by the *post-mortem* results. Case 1, is that of a man, aged 55, who suddenly began to experience a difficulty in swallowing, and in his speech. There had been no apoplectic attack. The difficulties increased rapidly, and were complicated by paralysis of the right leg and arm. The patient passed his motions and urine in bed; six weeks later his speech had become almost unintelligible, and he presented all the symptoms of bulbar paralysis. The masseter muscles were in a state of contraction. The upper branches of the facial nerve were free. There were no sensory troubles, but the motility of the left leg and arm was considerably impaired, and, as before noted, the right extremities were paralyzed. The respiration was superficial, the urine dribbled away constantly. The hearing was considerably impaired in the right ear. Faradic contractility was normal in the region of the facial nerve, the tongue and the extremities. The movements of the left extremities were irregular and atactic. Towards the end of his life, the patient was unable to close his eyes completely, or to move the eyeballs to the left beyond the middle line. All the extremities were in a state of contraction and paralysis. Death ensued ten weeks after the first symptoms of the disease had manifested themselves. The necropsy revealed a basal chronic meningitis, which was localized in the part of the brain corresponding to the posterior fossa, and which had led to the obliteration of a number of the smaller vessels of the pons, and to softening of the cor-

responding portion. There was extensive degeneration of the left half of the pons, which extended across the raphé into the right half. Some portions of the superficial and deep layer of the transverse fibres had been destroyed by two smaller foci which were on the same level. The crura cerebelli, the remaining portions of the pons, and the medulla were intact, with the exception of a secondary degeneration in both pyramidal tracts, which could be traced down as far as the lumbar cord. The roots of the cerebral nerves were also intact. In giving the history of this case, the author draws attention to two points, as being especially worthy of notice. First—the extreme rarity of similar cases. Second—the fact that the symptoms observed in the course of this affection correspond to the phenomena which occur in the course of the apoplectic form, bulbar paralysis, as described by Jouffroy.

Another case is that of a man, aged 50, who five years ago had had an apoplectic stroke, complicated with right hemiplegia and disturbances of speech. During the last weeks of his life, the patient had presented Stokes' respiratory phenomenon in a most exquisite form. At the *post-mortem*, cirrhosis of the kidneys, hypertrophy of the left ventricle, and a pleuritic exudation on the left side of the thorax were found, together with a remarkable anatomical change following an old obliteration of the vertebral artery. The left vertebral artery, from the branching off of the posterior inferior cerebral artery to its union with the basilar artery, had been changed into a solid thin cord, the inferior posterior cerebellar artery had shared its fate, while the anterior spinal artery had remained normal. The right vertebral artery was partly thickened. The bulbar nerves presented no microscopic change, but the ependyma of the bulbs was very turbid, thickened, and covered with granulations. After hardening the medulla in alcohol, a sclerotic degeneration of the ependyma of the fourth ventricle was revealed, which had originated in the plugged vessels of the choroid plexus, and extended into the region of the nuclei of the abducent nerve. Both sides were affected, but the left side more so than the right. The nerve nuclei, which lie beneath the degenerated portion, were comparatively little affected, with the exception of the nucleus of the left vagus nerve, and a small focus in the nucleus of the left hypoglossal nerve. The intrabulbar fibrous tracts of both nerves were unaltered. The left pyramid had undergone secondary degeneration, owing to a focus in the cerebrum. An independent focus, containing obliterated vessels, was found in the left anterior horn of the spinal column.

In a typical case of bulbar paralysis, with progressive muscular atrophy, Dr. Eisenlohr found that the nuclei of the gray matter had undergone sclerotic degeneration. In this case the fibres of the roots were atrophic, and the ganglionic cells of the anterior horns of the spinal cord were partly destroyed.

A man, aged 57, had for some time been complaining of occipital headache, when he suddenly had an attack of dextrilateral, transitory hemiplegia. Two days later, his left side became affected in a similar manner; his utterance was very indistinct, but the sensibility remained normal. After two more days, the right leg and arm were again affected; the patient then became somnolent, his respiration grew stertorous; he could not swallow, and died on the seventh day of his illness. The necropsy revealed a plug of 1 centimetre in length in the basilar artery, which had undergone atheromatous degeneration; the pons was very soft to the touch, though not degenerated.

In the last case, the symptoms observed during life did not correspond with the *post-mortem* results. The patient was a man, aged 73, in whom gradually for several years feebleness, first of the legs, then of the arms, had set in, together with disturbances of speech and paresis of the buccal branches of both facial nerves. The patient could swallow, and even perform simple movements with

his tongue. His utterance was explosive. On attempting to walk, or to stretch his legs, trembling set in. The tendon reflexes were normal. The action of the sphincters and the sensibility was normal. Later on, the patient became confused in his mind. The necropsy revealed several minute apoplectic cysts in the anterior portions of both nuclei caudati, immediately beneath the surface and in both thalami optici. The remainder of the brain was intact. The basal arteries were atheromatous. This case proves that bulbar symptoms may be caused by bilateral lesions of the cerebrum.—*London Med. Record*, Oct. 15, 1879.

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Changes in the Spinal Cord in Infantile Spinal Paralysis and in Progressive Muscular Atrophy.

At the late International Medical Congress, at Amsterdam, MM. DAMASCHINO and HENRI ROGER presented a paper on the alterations in the spinal marrow in infantile spinal paralysis, and in progressive muscular atrophy.

Among the diseases of the nervous system which are observed among children, there is one the symptomatology of which presents special characteristics, this is infantile spinal paralysis, otherwise designated as essential paralysis of infancy, because it was looked upon as belonging to the group of nervous idiopathic diseases, *sine materia*.

The result of a certain number of observations collected by Messrs. Roger and Damaschino is that the characteristic alteration of this affection is a lesion of the spinal marrow, the consequence of which is atrophy of the nerves and muscles.

Dr. Damaschino presented in support of this proposition, histological preparations, and some very conclusive observations. In three of these observations the lesions consisted in some foci of inflammatory softening, which were seated in the anterior cornua of the gray matter, and extended almost the entire length of the lumbar marrow. The lesion is more marked towards the right, at the level of the dorsal region, there were no distinct foci, but they discovered granular bodies accumulated around the vessels; atrophy of the cells, which was very considerable in the lumbar region, was also discovered in other parts of the marrow, and bore a constant relation with the dimensions of the foci and the variable degree of the vascular lesions.

The atrophy of the white antero-lateral columns was very clear, and there were at this level an abundant accumulation of connective nuclei, also very decided atrophy of the anterior roots. The muscular lesions consisted mainly, as shown by microscopic examination, in diminution of size of the primitive fasciculi.

A great number of muscles were the seat of an abundant deposit of adipose cells placed between the muscular elements.

On the conclusion of M. Damaschino's communication, M. BOUCHUT said that he himself had made a large number of autopsies in cases of infantile paralysis, and that he had not observed the lesions of the marrow mentioned.

M. DAMASCHINO replied that if the lesions he had just described were not to be found in the marrow, it was because the means employed were insufficient. The numerous facts that he, together with M. Roger, had observed, and the histological preparations that he placed before the members of the Congress, clearly proved the existence of these lesions.—*Archives Gén. de Méd.*, Oct. 1879.

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Hydrotherapeutic Treatment of Reflex-neurosis.

Dr. T. FRIEDMANN, the director of the hydrotherapeutic establishment at Vooslau-Gainfarn, reports the following three cases where excellent results were obtained by water. Case 1. A gentleman, aged 60, from Paris. He had suffered much mental emotion and terror during the siege of Paris, in 1871-1872.

Soon after, he began to notice a tremor in his upper extremities, which subsequently affected his lower ones. These latter were accompanied by convulsions and a frequent involuntary bending of the knees. When first seen by the author, the patient's condition was as follows: He was fairly nourished, and his internal organs were healthy. At every attempt to execute a movement, the upper extremities began to tremble. Both bicep muscles presented clonic convulsions; the latter could also be artificially produced by percussing the said muscles. The flexor muscles of the legs were affected by similar convulsions, which caused a frequent bending of the knees when walking. The movements of the hands were also greatly impaired; the patient could not raise a glass of water or a spoonful of soup to his mouth, without spilling the greater part of the contents on his clothes. He had for several years tried various cures, but without effect. At last he was persuaded to try what water could do for him. The treatment consisted at first in prolonged baths of medium temperature, which after a while were followed by cool sitz baths, combined with local shower baths. In the course of the first month, the patient's movements had become visibly stronger and less uncertain. Towards the end of the second month, the patient was able to undertake long walks, and could use his hands perfectly well. The convulsive neurosis which had been produced by psychical emotion had been effectually cured. Case 2, is a case of rheumatic reflex neurosis, which had presented all the symptoms of tetanus. The patient, a railway official from Galicia, aged 26, had felt a severe pain in the back after a hard day's work in cold, windy weather. Soon after, he became unable to walk, as every attempt of locomotion was followed by violent convulsions in the muscles of his limb and his trunk. He was obliged to give up his work, and after failing to obtain relief from the usual therapeutic means, he entered the establishment at Vöslau. He was pale, but fairly nourished. Family history good. He had always been well, with the exception of an occasional catarrh. The thoracic and abdominal viscera were healthy. No abnormal phenomena appeared as long as the patient was sitting quiet, but whenever he attempted to rise, tonic convulsions set in in the flexor muscles of the upper and lower extremities. The clonic spasms extended to the straight abdominal muscles and the extensors of the vertebræ. After walking a few steps, the patient suddenly assumed a crouching position, when the abdominal muscles felt as hard as a board; on attempting to rise he was drawn backwards by the clonic spasms of the dorsal muscles, and would have fallen on his back, if he had not either caught hold of something or else again crouched down. Every mechanical irritation increased this convulsive state of the muscular system. After continuing these movements for about ten minutes, the patient would fall back on his couch quite exhausted. The treatment consisted in sitz baths, which were subsequently combined with local douches and frictions. After a stay of two months in the establishment, the patient was able to return to work. Case 3, is that of a Russian gentleman, aged 26, who had been sent to the establishment by Profs. Billroth, Bamberger, and Duchek. The patient had been operated upon three months before for an abscess in the right maxillary region, which had been caused by periostitis. A few days after the wound had been healed, the patient began to suffer from epileptiform fits, which were subsequently complicated with tremor of the head and contractions of the cervical muscles on the left side. The patient had never before been subject to similar attacks, neither had any members of his family, although his father was said to have frequently suffered from congestion of the brain. The patient was a strong-built man, looking very pale. The thoracic and abdominal viscera were healthy. On the right maxilla was a scar of about three centimetres long, which was very tender to pressure. The application of the faradic current or of extreme heat or cold, was exceedingly

painful; and if repeated for some time gave rise to disagreeable sensations in the head. At the same time there was tremor of the head and contraction of the left sternocleido-mastoid muscle. In the morning and forenoon, the patient was generally quiet, with the exception of the symptoms which have been described. In the course of the afternoon, at about 4 o'clock, he suddenly became restless; his face was congested, his eyes were bloodshot and rolled about wildly; he did not venture to leave his room alone, but insisted on going out into the air. This prodromal stage lasted generally for one hour to one and a half hours, when he would suddenly fling his right arm around the neck of his attendant and jump about the room on his left leg, which was spasmodically contracted, for half an hour or more, till he sank down exhausted on his couch. At this stage of his paroxysms, he lost consciousness, and was seized with such violent tonic-clonic convulsions that he had to be held down by five or six men. From time to time he would utter the exclamation, "You rascal!" The convulsions generally ceased in the course of half an hour to an hour; the patient recovered consciousness and felt strong enough to leave his couch and take a walk. The nights were sleepless, and the patient only sank into a short slumber towards morning. During the first three weeks, the condition of the patient remained much the same. It was then suggested that perhaps excision of the scar might afford some relief. This plan was carried out, and after the wound healed, another attempt at hydropathic treatment was made. During the first few days, the fits described were frequently repeated, probably owing to the irritation caused by the fresh sore. But in a very short time the soothing influence of the water-treatment showed itself distinctly; the patient gradually became less excited, the paroxysms were slighter, less intense and frequent, and his mental condition was much improved. Three weeks after the operation, the fits had completely ceased, the patient's motor power was entirely restored, and three weeks later he left the establishment in perfect mental and bodily health.—*London Med. Record*, Oct. 15, 1879.

Optic Neuritis in Cerebral Disease.

In the August number of the *Annales d'Oculistique*, Dr. PARINAND, from the results of post-mortem examination in twenty cases of meningitis and four of cerebral tumour, in all of which a careful ophthalmoscopic examination of the fundus had been made before death, comes to the conclusion that the various intra-cranial affections only produce œdematous optic neuritis (choked disk) when they are complicated with hydrocephalic effusion. A large cerebral tumour may fail to give rise to any ophthalmoscopic changes in the papilla if unaccompanied by hydrocephalus, while on the other hand the smallest pathological change accompanied by effusion of any considerable extent into the ventricles involves the optic nerve. The increase in intra-cranial pressure produced by hydrocephalic effusion alone is therefore, according to Parinand, the cause of what is generally termed optic neuritis. He believes that the existence of true optic neuritis, or a state of actual inflammation of the optic nerve, must be admitted after the researches of Leber and Iwanow, but this condition produces visible alterations in the nerve much more slowly than the neuritis usually significant of cerebral disease, which is in reality an œdema.—*Edinburgh Med. Journal*, Nov. 1879.

Ménière's Disease.

At the late International Medical Congress at Amsterdam, Prof. DOYER, of Leyden, read a paper on this subject, which contained the following conclusions:—

1. In a general sense of the word, the name of Ménière's disease may be ap-

plied to all cases of vertigo which are caused by an abnormal irritation of the nerves of the semicircular canals. The irritation may be produced either by an exaggerated normal cause, *e. g.*, violent rotatory movements of the head, or of the whole body, or by an abnormal cause, *e. g.*, a sudden change of temperature (especially when passing from a higher to a lower temperature), variations in the intra-tympanic pressure, disturbances in the circulation or inflammation.

2. In a more restricted sense the name of Menière's disease is applied to cases where the vertigo is caused by an inflammatory condition either of the semicircular ducts or of the middle ear. The vertigo may either be persistent or simply caused momentarily by normal movements of the head. In some cases it appears periodically under the form of a fit, at intervals of weeks or even months.

3. Exposure to cold and catarrhs of the tympanic cavity play a prominent part in the etiology of Menière's disease.

4. The majority, if not all cases, of Menière's disease are of secondary nature, *i. e.*, they are caused by catarrhs or inflammations of the tympanic or mastoid cavity.

5. In typical cases the vertigo is preceded or accompanied by rotatory sensations which follow a certain order: the attack begins by a sensation of rotation around a vertical axis. The rotation invariably takes place on the affected side; sometimes it is combined with a sensation of swinging backwards and forwards. In more serious cases, the feeling is that of rotating round a horizontal axis both backwards and forwards. Finally, the vertigo becomes general, and the patient falls down, with, or without, loss of consciousness; he often vomits in such cases. Sometimes the attack is over in from ten to thirty minutes, in other cases it is called forth by a simple movement of the head during one or two days following the first attack, and the patient is obliged to lie perfectly still in order to avoid them.

6. In some cases, the rotatory sensations may be caused experimentally by certain therapeutic agents, *e. g.*, by the insufflation of air into the tympanic cavity in cases of acute inflammation of the latter, or by the injection of fluids into the mastoid cavity when the mastoid process has been perforated. In these cases, the rotatory sensation always takes place round a vertical axis and in the direction of the affected organ.

7. In some cases the attacks are accompanied by loud noises in the ear; in other cases there is a constant slight buzzing noise which does not increase in strength during the attack; sometimes there is no sound at all.

8. In cases of long standing, a slight feeling of vertigo persists even during the free intervals, and seems to be caused by the first movements of the head after awaking from sleep. Sometimes the patient feels as if he were going to fall either backwards or forwards. Other patients are obliged to keep the head fixed in a certain position, because every movement that takes place in the plane of one of the semicircular ducts is accompanied by a sensation of a heavy body rolling in the same direction. (In a typical case which came under the speaker's observation, the patient held his head inclined forward and to the left, and thus prevented all movement of rotation in the plane of the sagittal semicircular canal of the left side. The left ear was affected in this case.)

9. Menière's disease is frequently complicated with hysteria. It is also apt to produce in children a condition not unlike chorea and in adults clonic contractions of the muscles of the face and body. These often disappear entirely after a local treatment of the middle ear.

10. In some cases, patients after recovering from Menière's disease have lost the faculty of hearing.

11. Highly satisfactory results have often been obtained by local treatment, even in inveterate cases.

12. Professor Charcot has strongly recommended the use of quinine in the internal treatment of the affection, as it frequently wards off the attacks. In some cases where the inner ear is affected it has been observed that the use of quinine has been followed by increasing deafness, while the singing in the ear vanishes. This effect generally only lasts as long as the drug is used.—*British Med. Journal*, Sept. 20, 1879.

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Perforating Ulcer of the Stomach; Vomiting of a Tubercular and Sacciform Mass.

Dr. O. HJELT relates the following case in the *Finska Läkarsällskapets Handlingar*, Band xx (quoted in *Nordiskt Mediciniskt Arkiv*, Band xi). The patient, a woman aged 42, had enjoyed good health, with the exception of some slight dyspeptic troubles. On February 15th, she had a severe rigor, followed by fever, with burning pain in the throat, and violent vomiting. When admitted into the General Hospital, she had constant vomiting, and some, but not very severe, diarrhoea, which had set in about a week previously; she had also dysphagia. The mucous membrane of the mouth and fauces was much injected; and there was a diphtheritic deposit on the soft palate, uvula, posterior pharyngeal wall, and also on the tongue and gums. The epigastrium was very tender on pressure. Almost everything that the patient ate caused vomiting. This condition lasted about two weeks; after which there was some improvement. The diphtheritic process in the mouth and fauces gradually ceased, and the gastric symptoms were so far relieved that the patient could take easily digestible food without provoking vomiting. At the end of March, however, there was a change for the worse. The patient again became feverish; constant vomiting, partly of blood, set in; and the patient's strength was much reduced. On March 31st, she vomited a large consistent tubular and sacciform membrane, which was apparently a cast of the stomach and of a part of the œsophagus. An extremely severe pain in the epigastrium, which had troubled the patient for some time previously, ceased immediately afterwards. On April 6th, she had a severe attack of pleurisy in the left side, which two days later spread to the right side; on the 10th, there was peritonitis, with tympanic distension of the bowels, and great tenderness over the whole abdomen. The patient rapidly fell into a state of collapse, and died on April 11th. At the necropsy, the œsophagus was found to be much thickened, and to pass imperceptibly into the stomach, which formed a round sac of the size of a smallish apple. The spleen formed a tongue-shaped, obtuse, rounded body, about eight-tenths of an inch in diameter, lying nearly free in the stomach; at its lower part it was firmly inclosed in the wall of the stomach, but above this the point of the little finger could be passed into an open canal below the diaphragm and the adherent capsule of the spleen. The cavity of the stomach, which was much contracted, contained only 60 cubic centimètres (little more than two ounces) of fluid. The pyloric portion was much thickened; Brunner's glands were swollen; the pancreas was elongated and loose. The canal above mentioned as commencing in the stomach opened into the peritoneal cavity at the upper part of the spleen, which was here eroded, while the portion lying within the stomach had a firm thickened rough surface. The spleen, which in its middle part was firmly adherent to the diaphragm, the capsule being very thick at this part, had a semiglobular form, and was about four and a half inches in length and two inches in thickness. The membranous cast of the stomach and œsophagus, mentioned above, was 37 centimètres (14½ inches) in length. Narrow above, it increased gradually in breadth, until it suddenly expanded into a semiglobular sac; its

outer surface was rough, rather uneven, of a brown-gray colour with dark spots; its inner surface was of a dark colour, here and there nearly black; it was of firm consistence, and its thickness through the greater part of its extent was double that of a sheet of writing paper. The membrane consisted of a granular mass, with numerous fibres crossing in all directions, and a great abundance of small yellowish-red conglomerated blood-corpuscles and large dark adherent clots of blood. It might be regarded as a blood-extravasation moulded on the mucous membrane of the stomach and œsophagus.—*British Med. Journal*, Oct. 18, 1879.

Rupture of the Aorta.

The following case is reported in the *Presse Méd. Belge*. A woman aged 37 was received at the Hôpital Saint-Jean in Brussels. She said that she was six months pregnant, and complained of headache and of violent pain in the epigastrium. She was very restless. Two hours after the examination, the restlessness increased; her skin was covered with perspiration; her face twitched convulsively. She vomited frequently large quantities of mucus mixed with bile. Her bowels were moved once or twice. Two hours later, the patient died. During the whole of this time, her cerebral and respiratory functions had remained perfectly normal. The necropsy showed that the pericardium was distended by a voluminous clot. The heart was not adherent to the pericardium. The connective tissue at the base of the heart was infiltrated with blood, especially in the neighbourhood of the aorta and pulmonary artery. The auricles and ventricles were normal. In the aorta, about half an inch beyond the sigmoid valves, was a transverse rupture which extended through the whole of the inner coat; and the blood oozing from this rupture into the neighbouring parts had partly torn off the membranes of the pulmonary artery. The same had taken place in the aorta down to the lumbar region, and the iliac veins were overflowing with blood. No satisfactory reason for this rupture of the aorta could be detected. It might, however, have been caused by some rapid movement made by the woman during the last moments of her life.—*British Med. Journal*, Sept. 20, 1879.

A Rare Fungous Growth on the Hair in the Axillæ.

Dr. AXEL KEY describes the following case in the *Hygeia* for 1878 (quoted in *Nordiskt Mediciniskt Arkiv*, Band xi). A gentleman had for some time noticed that the hair in his axillæ stuck together, in consequence of being covered with a glutinous substance. The sweat of the axillæ coloured his shirt bright red. His condition in other respects was normal. On examination, Dr. Key found the axillary hairs greatly adherent; and a large part of them were covered with a gelatiniform substance like mildew. This had its seat on the free ends of the hair, where it formed partly isolated or confluent swellings, and partly bands like chains of pearls, or an adhesive mass surrounding the hairs. There were no changes in the skin. Microscopic examination showed that the changes were dependent on a peculiar fungous vegetation, which had a brimstone yellow colour by transmitted light. The development of the vegetation commenced in the form of small, slender, exceedingly delicate scales, which soon formed small round elevations, apparently homogeneous, but containing numerous small glistening spores. The scales seem partly to lie on the outside of the hair, but for the most part the vegetation penetrated between the outer layer of the epidermis covering the hair. Here and there, the vegetation could be traced to the interior of the hair. No mycelium was found. Dr. Key has not been able to find a similar case recorded in dermatological literature. Buhl alone has described in the *Zeitschrift für rationelle Medicin*, Band. iii, a new hair-fungus apparently like that described

above; he calls it *zooglœa capillarum*. The disorder would, therefore, seem to be very rare.—*British Medical Journal*, Sept. 27, 1879.

Syphilitic Herpes.

The patient, an inmate of the London Hospital, and under the care of Mr. JONATHAN HUTCHINSON, was an unhealthy-looking man, a discharged soldier, aged thirty-five, with peculiar eruption running round the left side of his chest, at once recognizable as a form of herpes zoster, or "shingles." There was nothing in the position or general outline of the eruption that would distinguish it from ordinary herpes zoster, but it would have been difficult to fail to notice at the first glance that its aspect was in some way different from what is usually seen in a simple case of this disease. On inquiry it was found that the eruption had existed for no less a period than nine months. The patient stated, moreover, that it was "much better" a few months before, but that it broke out again in (what he termed) a second attack, although the side had never been entirely free from eruption, even in the interval of amelioration. On examining the eruption closely, it was seen that in some places there were distinct and prominent scabs; the eruption here had evidently taken an ulcerative action, and approached in some little degree to the characters of *rupia*. The skin where the eruption had departed was of a dusky-red colour, and presented here and there a faintly depressed scar, showing that there had been a loss of tissue. It was ascertained the man had had undoubted syphilis; in fact he had a large periosteal node on the forehead at the moment. On this account, but still more from certain peculiarities of the eruption itself, Mr. Hutchinson said he was of opinion that this was a case of syphilitic herpes, and as such a very rare affection.

"Herpes," Mr. Hutchinson went on to say, "is, as is well known, a skin disease of nerve origin. It is produced through some particular nerve influence, and, having regard therefore to its origin, we must consider the present case not as an example of common herpes occurring in a syphilitic patient, and so possibly somewhat modified by that disorder, but as a case where the poison of syphilis has caused such nerve changes as to bring about this eruption. The action of syphilis in this case is through the nervous system, and the eruption must be considered as an expression of some syphilitic disturbance of nerve. Thus we see syphilis as an imitator of typical skin eruptions, and, as I have often stated, it rarely, very rarely, imitates herpes. I consider this eruption to be the syphilitic form of herpes on the following grounds: The man is syphilitic. The skin disease persists—it has persisted for nine months, with a recurrence of eruption during that time, whereas common herpes tends to spontaneous cure, as do all skin affections that have their origin in the nervous system. It is most rare, too, for common shingles to persist for so long a period as nine months. It is true that it is sometimes very tardy in its appearance, but, I think, never to such a degree as obtains in this instance. The scar left here and there by the clearing up of the eruption is depressed, distinct, and of a dusky-red colour. The eruption is at places almost rupial. Finally, there is one feature about the case that makes it—as a case of syphilitic herpes—very peculiar. Syphilitic herpes is nearly always symmetrical on both sides of the body, but in the present instance the eruption appeared on one side only, the right chest being perfectly intact. The case therefore, must be regarded as extremely unusual."—*Lancet*, Oct. 25, 1879.

Treatment of Syphilis in New-Born Infants.

Professor PARROT delivered a lecture on this subject (*Gaz. des Hôpitaux*, No. 100) at the Hospice des Enfants Assistés, from which we extract the following:—

The history of the indications which should be followed in the treatment of syphilis in new-born infants has in general been remarkably complicated, whereas simplification is the more required, inasmuch as we have to do with little children in whom hygiene and a very small number of pharmaceutical preparations furnish excellent results. The therapeutics, comprising questions of great practical interest, may be considered under distinct heads.

1. Should we treat infants born of syphilitic parents, even when such children exhibit no apparent traces of a syphilitic diathesis? In a word, ought we to institute preventive treatment in a new-born infant suspected of heredity? Authors are not agreed upon this grave question. Some recommend such treatment without any hesitation; but they make some distinctions: (1) if the father alone is syphilitic, it is useless to treat the infant: (2) if the mother has been syphilitic, but has been treated during pregnancy, the child need not be treated; (3) when both parents are syphilitic, or when the mother alone is affected and has not been treated during pregnancy, the infant should be submitted to specific treatment. All these distinctions belong to medical casuistry, and are only founded on disputable theories. The infant is just as syphilitic when its father alone is the subject of the disease as when the mother is so; and I lay down this formal rule, viz., that whenever I am in presence of an infant born of parents, one or both of whom are syphilitic, I never treat it when it exhibits no trace of syphilitic infection. Whatever may be the condition of the parents, their children are not necessarily the subjects of hereditary syphilis. I do not believe that in order that we may treat an hypothetical disease we have the right to expose an infant to the risks of a treatment which is not inoffensive, especially for one newly born. In all cases, if the child remains unaffected for a fortnight or a month, it is a proof either that it is not poisoned, or, if it is so, it is only in a benign manner, and that we shall easily combat a virus that manifests itself with so much difficulty.

2. The infant should be placed under treatment (1) when there are signs of syphilis manifest on the skin, mucous membranes, or bony tissue; and (2) when, in the absence of these signs, chronic and obstinate gastro-intestinal disturbances exist, resisting all ordinary treatment. Such disturbances are, in fact, the indication of visceral syphilis, and we should always bear this hypothesis in mind when we observe them. This is a positive rule, and I have seen an infant die of them, without the idea having ever occurred of treating a visceral syphilis of which there were no external signs, but which was found to exist at the autopsy. When the infant exhibits traces of apparent syphilides, we must still distinguish two cases, according as these signs are precocious, appearing at the time of birth or very soon afterwards, or when they occur later, constituting, for example, lenticular syphilides and syphilis of bone. It is essential that the therapeutical opportunity should be clearly determined. In the first category we meet with the most numerous and the most important manifestations of syphilis, the early syphilides. The infant is almost always very young, bringing the syphilis with it at its birth. The diathesis is then very active, very ardent, and will rapidly attain the viscera if it is not treated. In these cases mercury is the sole efficacious medicine, and no other should be thought of. Its *external* employment is the most ancient, for originally syphilis was treated only by frictions, and this method continues to be the best, the most efficacious, and the most prompt. Frictions may be employed when the infants reject all that is taken into the stomach, or are the subjects of intestinal disturbances which the mercury would only aggravate, adding to the existing atrophy. There may be contra-indications to the external use of mercury when a general eruption with ulcerated patches exists, but such cases are quite exceptional. Syphilis has its places of predilection, and never invades the armpits or the lateral parts of the trunk, and these are precisely the parts most

suitable for inunctions, which should not be made at the thighs or groins. The double mercurial ointment, consisting of equal parts of lard and mercury, should be diluted with two additional parts of lard, and of this three grammes (forty-five grains) may be used daily for an infant until it is a month old. After this age, and until the sixth month, the ointment may consist of one gramme and a half of the double ointment and three grammes of lard; and from six months until one or two years, three grammes to four grammes may be employed. Thus the doses of mercury are not increased in proportion to the age of the children, for the further this is advanced, the more does the diathesis become diminished and exhausted. The frictions are made during from one to five minutes only once daily. This mode of treatment is the most prompt and heroic, and is of the greatest service. (Professor Parrot entirely disapproves of the treatment by mercurial baths and by hypodermic injection of the sublimate.) The best medicinal agent for the internal use of mercury is Van Swieten's *liquor*, consisting of one part of the deutocliloride of mercury, 100 parts of alcohol, and 900 parts of water. The dose for a sickly new-born infant with intestinal disturbance is half a teaspoonful, and for a robust infant a teaspoonful—making from two to five grammes of the *liquor*, containing from two to five milligrammes of the sublimate. But such a dose must not be administered at one time. A spoonful, or five grammes of the *liquor*, may be added to twenty-five grammes of some kind of syrup as a vehicle, and a teaspoonful of this mixture may be given six times daily. When the infant is at the breast, one of these may be given before each suckling (and in the same way just before each time of taking the bottle, when brought up by it), so that the remedy is always taken *before* the repast, the milk of which renders it more inoffensive. To infants of six months a teaspoonful and a half may be given, and to those of three years two teaspoonfuls. Larger doses are both useless and mischievous.

The second category comprises the delayed or lenticular syphilides, appearing at the age of six months, or of a year or two—the last traces of a diathesis that is already exhausted. The disease is no longer dangerous, for if no obstinate intestinal disturbance has supervened, we may be almost certain that there is no visceral syphilis. The diathesis has not been able to attain the deep-seated organs, and it has become extinguished. When consulted at this period, we might abstain from all treatment; and we have seen spontaneous cases produced in this hospital in young robust infants. Still, as a general rule, treatment should be had recourse to even at this period; but then mercury should never be administered. What we have to do in these infants, who are really cured of the syphilis, is to modify the constitution of their economy, in which there will always be a tendency to engender at a later period, not syphilism, but, in my opinion, rickets. To this end we should give them iodine. The iodide of potassium may be given for from six to eighteen months, commencing with fifteen to twenty-five centigrammes, and going later to a gramme per diem, given in divided doses. To this, however, I prefer a mixture consisting of 1 gramme of the tincture of iodine to 100 grammes of syrup of gentian or bitter orange-peel, of which a teaspoonful may be given daily in divided doses. *Local treatment* also has its utility. The first rule is the observation of the most rigorous cleanliness, baths with bran or starch-water being employed daily, and absorbent powders used afterwards, such as one part of the oxide of zinc to thirty of starch powder. When there are ulcerations the glycerole of zinc (pure neutral glycerine thirty parts and oxide of zinc two parts) forms an excellent application. If the ulcerations are deep and have a tendency to phagedænisism, they should be powdered with iodoform.

8. How should syphilitic new-born infants be fed? Alimentation plays an important part in their cure, and for a full consideration of all the delicate questions relating to this subject I may refer to Dr. Fournier's able lectures delivered in

1877, confining myself to its purely practical and clinical aspects. An infant the subject of hereditary syphilis should be fed as much as possible, and the sole nutriment that is suitable and indispensable for it is breast-milk. The child should always be kept at the breast as long as there is no risk of contaminating the nurse; but when there is danger to the nurse it should be withdrawn. If the mother is supposed to be exempt from syphilis, although her infant is syphilitic she should suckle her child; and if there are risks to be run, the mother, before all others, ought to run them. If it is impossible for the mother to suckle the infant, recourse must be had to a nurse. When the child is born without any trace of syphilis, we may consign it to a nurse, recommending her to observe certain precautions, such as washing the mouth of the infant by means of a pad moistened with alcoholized water prior to suckling, and washing the nipple with the same after suckling; and carefully examining every day the condition of the mucous membrane and the anus of the infant. I believe that we must absolutely provide a nurse for such an infant, for without her its life is seriously threatened; and we have no right to expose it thus to almost certain death under the pretext that it may become syphilitic, for these infants frequently do not become so. On this point I differ in opinion from many eminent and competent practitioners, at the head of whom I place Dr. Fournier. But it seems to me that this is a question of life and death, for the new-born infant; and, moreover, I am in agreement with all those who, on the appearance of the slightest trace of infection, the slightest spot, prohibit the continuance of suckling, even when there seems no danger of conveying the contagion by the breast of the nurse. In such cases ought we to inform the nurse that the infant given her to suckle is syphilitic? This is a very delicate question in medical deontology; for the tribunals have alike condemned practitioners for having violated medical secrecy by so informing the nurse, and for having exposed the nurse to contamination through not informing her. Between these alternatives what course should we pursue? We should inform the parents of the danger which the nurse is incurring, and of their own responsibility, and invite them to dismiss the nurse immediately on some pretext—renouncing all attempts to bring up the child by the breast. If they resist his advice the *ultima ratio* of the practitioner is to retire from the case and see the child no more. This precept leads us far away from the time of Mauriceau, when they had no fear of infecting the nurse. In our days, the nurse must be first considered, her health being more precious even than the life of the infant. We have no longer the right to knowingly give syphilis to a nurse by confiding a syphilitic infant to her care. On taking the nurse away from the infant we must still give it milk, bringing it up by the bottle if no better means offers itself. An excellent mode would certainly be to suckle it by means of a syphilitic nurse; and at the end of the last century considerable sums were paid at the Hospice de Vaugirard in order to secure a constant supply of syphilitic nurses. The milk of such women, in fact, is frequently as good as that of a healthy nurse, and it is to be regretted that this institution no longer exists. In our own hospice we have recently had two syphilitic nurses who have rendered us real services. In the absence of nurses, asses' milk forms the best substitute, following it up by that of the cow. (Prof. Parrot has not found goats' milk, so strongly recommended by Fournier and others, very satisfactory.)

4. A final practical question is whether it is possible, when the syphilitic infant is suckled by a nurse or by a goat, to administer antisyphilitic remedies through the milk instead of giving them directly to the infant. In spite of the fact having been denied by distinguished chemists, it appears to be generally admitted that mercury given to the nurse passes into the milk; but this is certainly a very uncertain mode of treating a child, since the quantities absorbed depend upon different

conditions acting upon the system of nutrition. The best procedure is to give the mercury direct to the child before its repasts, not mixing it with the milk.—*Med. Times and Gazette*, Oct. 11, 1879.

Surgery.

Thrombosis Cavernosa.

At a meeting of the Society of Physicians in Vienna, Prof. BILLROTH reported (*Allg. Med. Cent. Zeit.*, No. 51, 1879) a case of spontaneous gangrene which came under his notice in the course of last year. The patient was a strongly-built man, aged 47, who, for the last five years, had been getting gradually more and more weak. Standing about, walking, and riding fatigued him very much. No cause could be discovered to explain this peculiar condition. Neither the heart nor the arteries were affected. Last summer the patient had his corns cut by a barber, after which operation an abscess broke out on the big toe, which would not heal. It was a gangrene of the big toe, such as is only seen in cases of senile gangrene. The patient suffered excruciating pains; for some time a line of demarcation seemed to be forming, then he had again violent pains, the gangrene spread to the second toe, and six weeks later the man was reduced to a perfect skeleton. Prof. Billroth then resolved to resort to amputation of the leg, although he did not believe that the patient would survive the operation. To his surprise, however, the wound healed well, the patient recovered, and does very well now. On examining the stump, the arteries were found to contain vascularized tissue, which might easily have been taken for common blood-clots. A second intima had formed within the arteries, and the openings of small vessels could distinctly be seen in the thrombus. This formation of vessels within the thrombus explains sufficiently why the gangrenous process did not spread more rapidly. Billroth has designated this affection, *Thrombosis cavernosa*. It is generally thought to be caused by syphilis, but the patient positively asserted that neither he nor any member of his family had ever had syphilis. As he still suffered pain in the stump of his leg, Billroth put him through an antisypilitic treatment, consisting of the internal use of iodide of potass and rubbing with belladonna and ung. cin., which had a soothing effect. Billroth thinks that similar processes occur more frequently than is generally supposed.—*London Med. Record*, Oct. 15, 1879.

Foreign Doctrines of Trephining.

The recent volume of *Revue des Sciences Médicales* contains a very exhaustive article, by M. SCHWARTZ, on the recent history of trephining and the indications for this operation. The paper is divided into two sections, which treat respectively of primary and secondary trephining. It will be of interest to give an abstract of this valuable report.

Percival Pott, J. L. Petit, Quesnay, Méhie, and De la Touche frequently practised preventive trephining. The object of this operation was to prevent compression and inflammation of the brain, by opening the skull immediately after the accident. In the language of modern surgery, however, trephining is said to be primary when it is performed in the course of the first few days following the accident, and either before the period of inflammatory reaction, or even

after it has set in. It is necessary to bear this point in mind. During the latter half of the present century, the operation had become almost obsolete. It was not until 1867, when Professor Broca published the results of his researches on the centre of localization of speech, that the attention of French surgeons was again directed to it. An animated discussion took place at a meeting of the Société de Chirurgie, when it was discovered that trephining had been so rarely practised of late, that it was very difficult to collect a sufficient number of cases to justify or oppose the operation.

The year after this discussion, in which the most celebrated French surgeons joined, M. Larrey presented to the society a paper on trephining, and the indications and contraindications for performing the operation. According to his experience, the operation was indicated: 1. In cases of fracture of the cranium, when the fragments of bone press on the brain, and give rise to serious symptoms, which persist even after the fragments have been removed; 2. In cases of fracture where the splinters and fragments of bones, or of foreign bodies, have penetrated into the substance of the brain, and it is impossible to remove them without trephining; 3. In other complicated lesions of the skull, where there are symptoms of an accumulation of blood or pus pressing on the brain, and the usual therapeutic agents remain ineffective.

The following were the contraindications for trephining: 1. When a foreign body has penetrated so deeply into the brain that it cannot be recovered; 2. If the blood or pus contained in the skull do not appear to form a focus in connection with the opening in the bone; 3. In all fractures which are not complicated by any phenomena of compression or of paralysis, etc.; 4. In cases of cerebral commotion or coma; 5. In epileptiform transitory convulsions; 6. In cases of encephalitis or encephalomeningitis.

The only drawback to this elaborate classification is, that it is almost impossible to distinguish between these different lesions at the bedside of the patient. This difficulty, in fact, was one of the principal strongholds of the adversaries of trephining. The surgeons of the day were divided into two parties; but the prevailing opinion was against the operation.

In 1874, Sédillot strongly advocated trephining in cases of fracture of the inner table of the skull; but, as it is very difficult to diagnose isolated fracture of the inner table, little attention was given to his doctrine till 1876, when M. Sédillot presented to the Académie des Sciences a treatise on trephining, containing the results of one hundred and six observations made by him. Of these one hundred and six patients with fracture of the skull, seventy-seven were trephined and twenty-nine were treated by the expectant method. Of these latter, one recovered and twenty-eight died. Of the seventy-seven who were trephined, twenty-nine recovered and forty-eight died. No fixed time was given for the performance of the operation. Of nine patients on whom preventive trephining was performed, six recovered and three, or 33.3 per cent., died. Of sixty-eight on whom it was done for curative purposes, twenty-four recovered and forty-four, or 64.7 per cent., died; and of forty-seven, where the operation was deferred, fifteen recovered and thirty-two, or 67 per cent., died. It results from these numbers that the chances of recovery decrease in proportion as the operation is postponed.

About the same time, attention was attracted by the remarkable works of Hitzig and Ferrier on cerebral localization. They proved, by their investigations, that there exist certain zones on the surface of the brain, in the frontoparietal region, which, if irritated, will give rise to convulsions or contractions in the opposite half of the body. If these zones are removed or destroyed, paralysis of certain members follows. According to M. Vulpian, these zones act through

the intermediary agency of the gray cortical matter, or through the white matter which is situated beneath the gray substance. Bochefontaine and Duret have shown that a certain proportion of the phenomena of irritation, such as convulsions and contractions, can be traced back to lesions of the nerves of the meninges, especially of the dura mater. These phenomena ought in fact to be regarded as true reflex actions, of which we know the centripetal tract, the centre, and the centrifugal tract. Having once settled the different centres of localization in the brain, the next step was to discover what particular places on the skull would correspond to the said centres. This could best be done by ascertaining the position of the fissure of Rolando, seeing that such of the motor centres whose position is sufficiently well known are situated around it. In the adult, the mean distance from the bregma to the upper end of the fissure of Rolando is forty-seven millimetres. The number varies according to the conformation of the skull, but the deviations are very slight indeed. The bregma may be determined by the aid of Professor Broca's ingenious instrument, or by M. Lucas-Championnière's biauricular cartoons. The point where the biauricular line is intersected by the median line of the calvarium corresponds to the spot we wish to find.

In order to ascertain the inferior end of the fissure of the sulcus of Rolando, draw a horizontal line for about seven centimetres from the external orbicular apophysis. If a perpendicular line be then erected on the posterior end of this line, and continued upwards for five centimetres, the inferior portion of the fissure of Rolando will be found to correspond exactly to this point. The localization of the centre of speech is determined in the following way. A horizontal line is traced from the external orbicular apophysis, and continued towards the crest of the frontal bone for about five centimetres. A perpendicular line, three centimetres in length, is erected in this spot. If the trephine be applied to the region which is situated anterior to the fissure of Rolando, after it has been traced out in the way we have just described, it will affect the anterior motor centres. If the trephine be applied to the region situated behind the fissure of Rolando, it will affect the posterior centres.

It is natural that, in proportion as a more thorough knowledge was obtained of the functions of the cortical substance of the brain, and especially that portion of it which is closely connected with the skull, professional opinion became gradually more reconciled to the operation. This new phase was ushered in by the works of MM. Proust, Terrillon, Lucas-Championnière, Pozzi, Gosselin, and Le Dentu. The two latter presented each a report on the subject; the former to the Académie de Médecine, the latter to the Société de Chirurgie, which contain a fund of valuable information for the surgeon.

It remains now to speak of the present state of the question in France. According to the opinion of such eminent surgeons as Dr. Legouest and Dr. Tillaux, the removal of splinters or fragments of bone from a fracture of the skull does not constitute primary or preventive trephining. It is merely a surgical operation, such as would be resorted to in any case of fracture, and performed with the aid of appropriate instruments.

Concerning primary trephining (for preventive trephining has become nearly obsolete, in spite of Sédillot's endeavours to restore it), modern surgeons are divided into three parties. Those who look upon the doctrine of cerebral localization as not being sufficiently established yet, and who do not feel themselves justified in diagnosing a cerebral lesion from a functionary symptom, have remained, as it were, stationary. M. Gosselin and the German surgical school represent this opinion. The theories of this party may shortly be summed up as follows: Preventive trephining can be resorted to without any danger, and even

be useful in cases where the skull has already been opened by a fracture; but it is more dangerous than useful, whatever the functional symptoms may be, when the skull has not been fractured, and would have to be opened by the operation. To the second category belong the surgeons who believe to a certain point in the doctrine of localizations. They admit that the operation may prove useful under the following circumstances: 1. In cases where it is necessary to remove foreign bodies or fragments of bone from the dura mater and the brain; 2. When it is necessary to promote the evacuation of accumulations of blood or serum between the dura mater and the brain, as these are liable to exert a deleterious influence on the brain, either through putrefaction or by pressure; 3. For the purpose of allowing purulent accumulations to escape.

Trephining is always dangerous when it establishes a communication between the arachnoidian cavity and the air. It follows that, in cases of existing fractures, it may be performed without danger. Messieurs Le Dentu and Legouest object to preventive trephining. Primary trephining may be resorted to in cases of convulsions which are caused by a limited depression of the skull, or by general hemiplegia accompanied by stertorous breathing and loss of consciousness. In all other cases it is best to wait, as it often happens that all these symptoms disappear without surgical treatment. If, however, the serious symptoms persist, or become more intensified, the operation must be resorted to at once, but no more crowns should be applied than are necessary. In short, the practitioners ought entirely to be guided by local symptoms, and not by the situation of the centre, the peculiar condition of which gives rise to certain symptoms.

The third class is represented by M. Lucas-Championnière. He teaches that trephining may be determined solely by the cerebral localizations, and that even preventive trephining is admissible. The operation is indicated in cases where it is necessary to raise up or remove fragments of bone which irritate the brain, to remove a foreign body, or to evacuate an accumulation of blood in the brain. It may also be performed at a later period for the purpose of removing splinters, raising a depression, or evacuating a purulent extra- or intra-cerebral gathering. If, however, no apparent lesions or accidents take place after a trauma of the skull, it is advisable to wait. If the patient present depression of the skull without any brain-symptoms, the surgeon must hold himself in readiness to trephine at a moment's notice. The same precautions must be taken in a case of traumatic fracture without depression.

If the patient be comatose, the operation must be resorted to in cases of depression of the skull, or of paralysis or convulsions of the opposite half of the body. M. Lucas-Championnière is so much in favour of trephining, that he regards it as indicated in cases of paralysis where all other symptoms are absent. In secondary paralysis, the indications are less formal. In general hemiplegia, the operation may be safely performed, as the lesion is probably an extensive one. In cases of convulsions, with or without paralysis, the operation is *de rigueur* if the convulsions be localized.

As far as fractures of the inner table are concerned, trephining must be performed whenever the symptoms appear serious. The trephine must be applied to that particular spot of the surface of skull which corresponds to the affected centre. The latter can easily be identified by symptoms of paralysis or localized convulsions. It does not do to be too timid; and a number of trephines can be safely applied. In short, the author has come back to the doctrine of preventive trephining.

Dr. Otis, in his interesting work on *Gunshot Wounds* during the civil war in America, has expended much labour on an exhaustive compilation of statistics on primary and preventive trephining. He tabulates the cases of one hundred and

ninety-six patients who were trephined for gunshot wounds: of these, 110 (56 per cent.) died; 46 operations for primary trephining were performed, with a mortality of 32, or 69.6 per cent.

Echeverria, in his work on *Trephining for Traumatic Epilepsy*, quotes 18 cases of what he calls primary trephining, out of which only 3 ended fatally. In Germany, the majority of surgeons were even more opposed to the operation than in France. Beck, Bergmann, Chelius, and Roser admit it only in exceptional cases. Nussbaum, Esmarch, and especially Stromeyer, are very much against it. It seems, however, as if of late a gradual reaction in favour of trephining were taking place in Germany, as is evident from Bluhm's treatise on the subject. In fact, Fischer, Roser, and Bergmann recommend trephining with a view to prevent encephalo-meningitis, and in certain cases of depressions of the skull which may be recognized easily by the existence of a wound or a visible depression of the bones of the skull. They do not think it safe to rely too much on certain functional symptoms. According to Bluhm, the death-rate in primary trephining is 55.26 per cent., which rises to 64.29 per cent. if we consider only the cases where the operation was performed for gunshot wounds.

In short, in comparing the statistical tables drawn up by Sédillot, Echeverria, Otis, and Bluhm, it will be found that two are in favour of primary trephining, and two against it. We must, however, remember that out of the eighteen operations which Echeverria quotes as primary, only seven were performed in the course of the first four days after the accident. The remaining operations must be classified among the intermediary operations for trephining.

In comparing all the different statistical tables which we have quoted in this work, we find that the danger of the operation decreases if performed from five to twenty days after the accident, i. e., if secondary or intermediate trephining be resorted to instead of primary. It must not be inferred from this that primary trephining ought never to be performed; we have as yet no right to emit a decisive opinion on the subject. But if the operation is to be resorted to at all, it must only be done on very precise indications; and it might even be unsafe to trust too much to the theory of localization till our knowledge of the functions of the gray matter of the brain has become more firmly established, and we have discovered more satisfactory methods of applying antiseptic dressing to head cases.—*British Med. Journal*, Sept. 27, 1879.

Emphysema of the Upper Eyelid produced by blowing the Nose after an Injury.

Dr. A. D. WILLIAMS relates the following case. A young woman called to ask him about her eye, which she had injured only a few minutes before by a severe fall. By accident, she tumbled down four or five steps out of a front door upon the pavement, strikingly heavily upon the bricks with the supraorbital bone of the left side of the head and body. The fall caused considerable contusion of the flesh and some abrasion of the skin over the left eye, but no cut. Soon after she stood up, she had occasion to blow her nose quite hard, and was surprised to find that the upper eyelid swelled up to such an extent that she could not open the eye even with her fingers. The suddenness of the swelling and her inability to open the eye in any way naturally frightened her very much. Upon examination, Dr. Williams could find no injury other than the contusion of the flesh and the abrasion of the skin over the eye. The peculiar cracking feeling communicated to the fingers by palpation conclusively proved that the great swelling of the lid was caused by the presence of air in its areolar tissue. By pressing upon the lid a little, the air could be forced out of the lid into the deeper tissue of the orbit, which allowed the lid at once to partly open. The pressure caused the cracking

noise to be both heard and felt by the patient. To account for the emphysema of the lid, it is necessary to suppose that the fall caused sufficient fracture of the bone at some point to make an opening through it. The locality of the fractured point was most likely in the outer or anterior wall of the frontal sinus. When the patient blew her nose, the pressure was sufficient to force the air through the opening in the areolar tissue of the lid.—*British Med. Journal*, Oct. 18, 1879.

Plan of a Regulation for Testing the Visual Faculties of Railway Servants.

At the late International Medical Congress at Amsterdam, Prof. DONDERS, of Utrecht, read a paper on this subject, and of which the following is a summary.

I. *Remarks.*—1. It has been shown by experiments which have been made for the purpose on railway lines, that it is necessary to possess normal visual faculties in order to be able to distinguish the signals at the given distance. 2. It results from an examination of the railway servants. a. That in cases where an examination had been required, about three per cent. of the officers were not fit for the service. b. That the said persons had been received in spite of their faulty vision. c. That visual defects are seldom acquired during the service.

II. *General Regulations.* 3. It is necessary (a) to submit all the officials to a new examination; (b) to be very careful in admitting new officials to the service; (c) to re-examine the officials in the cases and circumstances given under 6 a. 4. The general revision takes place but once by experts who have been specially chosen for the purpose, according to given rules, under the direction of the ophthalmic surgeon of the railway company. The tables which show the results of individual examination are submitted to him, and he is bound to re-examine all those individuals whose visual powers appear doubtful, and to give his opinion on the subject. 5. New officials can only be admitted on presenting a certificate signed by one of the official experts of the company. These experts are elected by the managers after having been recommended by the ophthalmic surgeon to the company. 6. A special re-examination takes place: A. Once in two years, for the purpose of testing the acuteness of visual perception. It is conducted by an officer who has received the necessary instructions from the ophthalmic surgeon, or one of the official experts. B. For the purpose of testing the visual perception in general. a. From the age of forty-five and upwards, once in five years by an official expert. b. In special cases (1) after diseases of the eye; (2) after traumatic lesions, especially such as are liable to cause a commotion of the brain, or after cerebral affections in general. c. If certain mistakes or actions have taken place, which may lead to doubt the integrity of the visual function. d. If the periodical re-examination A seem to infer an insufficient acuteness of sight.

III. *Examination.* 7. The examination relates principally to (a) the refraction; (b) visual range; (c) perception of colours; (d) the visual field. The examination must extend to the general condition of the eyes and eyelids. It must also be noted whether there exist any progressive diseases of the eye, such as cataract, etc. 8. The refraction and visual range are tested simultaneously in the general manner, for seeing at a distance by means of Snellen's letters, and with the aid of glasses. Each eye is tested separately at first, then both together. In cases where there is a slight dimness of the cornea, the examination takes place in the open air. 9. The qualitative test of colour-perception is conducted by means of Holmgren's method, Stilling's pseudo-ischromatic tables, and Donders' coloured samples. The quantitative test is conducted after Donders' method, both with transmitted and incident light. 10. The extension of the visual field is tested by asking the patient certain questions relating to the movements of the

hand and to the number of fingers extended. The observer and the patient must keep their eyes steadfastly fixed on one another. 11. The bimanual test for the range of vision (Art. 6 A) takes place in the open air, and is conducted according to given instructions with the aid of Snellen's movable letters. If the visual range should be less than four-sixths, the individual must be re-examined by one of the special experts.

IV. *Conditions for Reception.* 12. Persons who apply for a situation as engine-driver or stoker must present the following certificates. *a.* A certificate that their eyes and eyelids are healthy, that there is no tendency to chronic congestion or inflammation. The visual field must be extensive, visual range and refraction normal. Colour-perception must be at least $\frac{4}{5}$. There must be no traces of cataract or any other progressive diseases of the eye. Persons who apply for situations as railway servants must be possessed of the following certificates. *b.* A certificate of health of the eyes and eyelids, absence of habitual congestion or inflammation. The visual field must be unlimited for both eyes, the visual acuity and refraction must be normal. Colour-perception for one eye at least $\frac{4}{5}$; for the other eye the visual range and colour-perception must be at least $\frac{4}{5}$. There must be no traces of cataract or any other progressive affections of the eye. 13. At the re-examination of stokers and engine-drivers who have been employed in this capacity for more than one year, they must be shown to have a visual range of at least $\frac{4}{5}$ (without glasses), and a colour-perception of at least $\frac{4}{5}$ without glasses for one eye. For the other eye, the visual range must be at least $\frac{4}{5}$ (without glasses), and the power of distinguishing colours must be $\frac{4}{5}$. At the re-examination of station-masters, their assistants, the inspectors, guards, and others, who have served on the line for more than a year, they must fulfil the following conditions. The visual field must be unlimited at least for one eye. The visual range of both eyes must be at least $\frac{4}{5}$, and the colour-perception $\frac{4}{5}$. If this degree of visual range can only be attained by wearing glasses, the individual in question must be obliged to wear them. 14. Individuals whose visual range or perception of colour is less than $\frac{4}{5}$, but more than $\frac{3}{5}$, both for day and night signals, are considered comparatively fit for the service. They will be registered as such, and employed only when it suffices to distinguish the signals at comparatively short distance. The same degree of qualification would not be sufficient for stokers or engine-drivers. 15. Individuals whose visual range or colour-perception with both eyes is $\frac{3}{5}$ or less, even with the aid of glasses, are unfit for service on the line.—*British Med. Journal*, Sept. 20, 1879.

Case of Stenosis of the Eustachian Tube with Hypertrophy of the Membrane of the Tympanum and Chronic Catarrh cured by Cold Water.

ONORATO relates (*Geom. Internaz. delle Scientif. Med.*, Fascic 5, 1879) a case of stenosis of the Eustachian caused by the spreading of a chronic catarrh of the pharynx. The patient, a youth aged 23, felt one day a slight pain in his left ear, which he attributed to rheumatism. It ceased after a few days. The following year it reappeared, and was accompanied by noises in the ear, which the patient compared to the humming of bees. This noise continued for several months, and was at times so strong that the patient's mind began to suffer under it. Sea-bathing gave temporary relief; but one day the noise reappeared stronger than ever. The whole pharmacopœia had been exhausted, and still there was no improvement. At last the author prescribed the following treatment: the patient was to shave his head, and every morning, when washing his face, to keep his head immersed in the basin for a few minutes. Then, after taking it out, he was himself to pour a pint of water on his occiput, taking care to let the water run

over his neck and ears. On the third day after undertaking this care, the noise decreased, and continued to do so till about a fortnight later, when it ceased altogether. The left ear, which had been considerably affected during his sufferings, became quite strong again, and the patient benefited much by the treatment, which rendered him less liable to contract colds.—*Lond. Med. Record*, August 15, 1879.

Use of the Lever in Controlling Hemorrhage in Amputation of the Hip-joint.

Mr. RICHARD DAVY, Surgeon to the Westminster Hospital, urges (*British Med. Journal*, Nov. 1, 1879) the importance of controlling hemorrhage in amputation at the hip-joint by compressing the common iliac artery, which he does by means of an ebony lever, which varies in length from 18 to 22 inches, its surface is very smooth and polished, and its ends are rounded off much like the finger tips. The maximum transverse diameter is five-eighths of an inch; the minimum three-eighths of an inch. The rectal end is graduated to an inch scale, so that the surgeon who applies the lever can at once learn whereabouts may be the end of the rod.

As proof of the perfect safety and absence of inconvenience in using the lever, Mr. Davy has compressed the common iliac artery in a man suffering from aneurism of the right external iliac artery, aged 60, for twenty minutes, and without chloroform or other anæsthetic. The only pain felt was the presence of a foreign body; showing how tolerant of pressure the upper part of the rectum is. In no case has any blood or stain been seen in the stool, though he has watched carefully for this event.

On anatomical grounds, the situation of the common iliac is perfect for the ends of compression; the lever drops between the psoas magnus muscle and the bodies of the lumbar vertebræ, having the spring (sacral margin) of the true pelvic brim as a counter-resistance to the lever, and no large nervous trunks in the way.

Mr. Davy enumerated the following as the salient advantages of rectal compression:—

1. Most perfect control of the required artery.
2. Minimum amount of disturbance of the circulatory system.
3. Independence of the respiratory movements.
4. Its general and easy applicability; strictured rectum being the sole obstacle.
5. The pressure applied is so easy to maintain, and the assistant's body so well out of range of the operator that no hurry need perplex the one nor anxiety the other.
6. Its application is quite safe in skilled hands, no injury having ever resulted, and but little pain having been suffered.
7. Cheapness and simplicity; illustrating a lever of the first order.
8. The success hitherto achieved by its employment.

Mr. Davy has the record of ten cases in which the lever has been used; the total amount of blood lost during the ten operations has been under eighteen ounces, and there have been 80 per cent. of recoveries.

On Malformations of the Skeleton and their Treatment, with regard to the Physiological Development of the Skeleton.

At the late International Medical Congress at Amsterdam, Prof. HUETER, of Griefswald, presented a paper on this subject and offered the following conclusions:—

1. Acquired pes valgus and genu valgum, when they are not caused by inflam-

mation or traumatic lesions, are due to the diseases peculiar to the development of the skeleton.

2. These affections must in such cases be regarded as being due to the abnormal activity of those physiological changes which take place normally under the influence of the movements of the joints of the lower extremity, and especially through walking.

3. In such cases, the deformity is caused either by a normal pressure on abnormally soft parts of the skeleton (rachitic form), or by an abnormally great pressure on normal parts of the skeleton (static form).

4. Congenital pes varus may be regarded as a disease peculiar to the growth and development of the skeleton. In the majority of cases, the onset of the affection is not marked by any peculiar functional muscular troubles, and the conformation of the bones of the tarsus presents an abnormal development of the normal fetal conformation of the bones.

5. The majority of cases of common scoliosis, especially when they are not caused by the shortening of an extremity or by a process of cicatrization (pleuritic empyema), must be considered as the effects of an affection of the bones of the trunk.

6. Such cases of common scoliosis are caused by an asymmetric development of both halves of the pectoral vertebræ, and by asymmetric growth of the ribs, both to the right and the left and the diameter of the thorax. It follows that common scoliosis is a disease of growth analogous to the asymmetric development of the pelvis and the skull.

7. It being once admitted that congenital pes varus and acquired pes valgus and genu valgum, as well as ordinary scoliosis, are caused by a vicious conformation and an abnormal growth of the bones, it is clear that the treatment would consist in these cases in checking, by a well-regulated pressure, the tendency of those portions of the bones that grow exuberantly, and in stimulating, by removing all pressure, the growth of those portions of the skeleton which are backward in their growth. In this way, it will be possible to obtain a normal conformation of the skeleton.

8. By applying this method of treatment to cases of incipient scoliosis, we may be sure of success.—*British Med. Journal*, Sept. 20, 1879.

Experimental Studies on the Etiology of Scrofulous and Tuberculous Inflammation of the Joints.

By injecting small particles of tuberculous human lungs or tuberculous sputa into the lungs of rabbits, either through a tracheal wound or directly through the thoracic walls, SCHÜLLER (*Centrbl. f. Chir.*, No. 19, 1879) succeeded in producing a characteristic inflammation of the joint in a knee which had previously been either dislocated or only slightly injured. This inflammation was very similar to the scrofulous and tuberculous affections of the joints to which human beings are liable. The results followed if minute particles of granulations or tissue from scrofulous lymphatic glands or minute particles of lupoid tissue were injected into the lungs through a tracheotomy wound. In some of his experiments, the said substances were injected into the internal jugular vein, or into the abdominal cavity, the results being in all cases the same. According to the author, the inflammations of the joints which are in this way caused, consist partly in a pannous growth of the synovia, partly in granulation of the same. Foci of the size of a pin's head are developed in the epiphysis of the tibia. They contain tubercles. The latter are also found occasionally in the synovial membrane, where they appear to develop in particular points of predilection. It is worthy

of notice that after all these experiments, the author found tubercles in the lungs, and frequently also in the liver and in other organs. In order to ascertain in what way the microscopic organisms which are always present in the matter with which the experiments were performed produce inflammation in the injured joint, the author made the following experiments: 1. For the purpose of finding out whether particles of solid matter could pass from the lungs into the blood or into certain parts of the body which had been previously injured, the author injected powdered flour, colouring matter, etc., into the lungs of rabbits, and injured the knee-joint of one leg. No inflammation ensued, and very few particles of colouring matter could be found in the synovial membrane or in the marrow of the bone. 2. The particles of colouring matter were then mixed with tuberculous sputa. This time the coloured atoms could easily be distinguished in the synovial membrane, and appeared to the naked eye like grayish incrustations. 3. When the bacteriæ of putrefaction were injected into the lungs, the animal always died in from one to five days. The injured joint revealed a slight bloody serous exudation, containing a few solitary pus corpuscles and bacteriæ, like those which had been injected. 4. The same results were obtained by injecting bacteriæ which had been obtained by fractioned breeding. 5. The same characteristic synovitis was caused in the joint by inoculating the animal with a few drops of blood from an animal which had previously been infected with tuberculosis. 6. A series of experiments were performed with antibacterial remedies, which the animal was made to inhale. It was invariably found that the inflammation grew better, but the drugs had no effect whatever on the caseous process of inflammation. The animals seem to live a little longer when these antibacterial remedies have been used. It is evident from these experiments in what way scrofulous or tuberculous inflammation of the joints may develop in man after light injuries, if the person in question happens to be disposed to tuberculosis. Local tuberculosis of the joints in man, is in most cases owing to the presence of a tuberculous vein or to bacteriæ in the blood.—*London Med. Record*, Oct. 15, 1879.

On the Fungous Inflammations of the Joints.

Prof. VOLKMANN, in Nos. 168 and 169 of his *Sammlung Klinische Vorträge*, takes up the pathology of these joint affections so common under the name of hip-joint disease—white swelling, scrofulous inflammation of the joints, etc., to which Billroth has assigned the term “fungous,” and he shows that his clinical experience, founded on the examination of large numbers of very early cases of this diseased condition, treated antiseptically, is opposed to the ordinary view of their pathology, or at any rate of the process underlying their initial stage. According to him the disease does not begin in the capsule of the joint, in the synovial membrane; it begins in the bone itself, and is throughout of a tubercular character. We shall devote the rest of this article to a fairly detailed abstract of his facts and of his argument in favour of his position.

The vast majority of these joint inflammations, says Volkmann, begin with small localized centres of disease (*Heerdekrankungen*) either in or on the surface of the bone. They may lie at some distance from the joint-cartilage, and even in the diaphysis. They are seldom larger than a cherry-stone or a hazelnut, and usually only one exists in the neighbourhood of a joint, though sometimes there are several of them, and then their favourite seat is the epiphysis. Though very variable in their position, they have certain bones which they specially attack. These are, in their order of frequency, the olecranon, the two condyles of the humerus, the calcaneum, the internal condyle of the femur, and

the neck of the femur; the latter suffering more often than the head of that bone. The acetabulum is also much more often primarily affected than has been generally believed, and "the speedy success of an excision of the hip-joint often enough depends on the possibility of discovering and removing such spots of disease from the pelvic bones which enter into the formation of the acetabulum."

What is the histological character of these foci? Professor Volkmann believes it is always tubercular, using the term in the strict sense of the word. They are masses of miliary tubercles in various stages, the older caseous, the younger consisting of a reticulum, central giant cells, epithelioid cells in their middle layer, and small-celled granulation tissue in their periphery. They caseate rapidly from want of bloodvessels. We need not further describe the structure of growths so familiar to all students of pathological anatomy. Professor Volkmann does not deny the possibility of these primary caseous foci in the bone having a purely inflammatory origin, and depending on what he terms an *Osteomyelitis caseosa*, but his own conviction is that, as stated above, they are invariably produced by the retrogression of miliary or submiliary tubercles.

We must now rapidly glance at the progress of a joint, one of whose articulations is the seat of such a caseous tubercular mass as those above described. The mass itself, according to Volkmann, gives rise to no symptoms until, or unless, it softens, which it does, as a rule, sooner or later. Then either a small abscess forms in the osseous-tissue, or (and this is the rule with children) the caseous matter separates as a sequestrum, and lies free in a cavity lined with gray miliary tubercles. And now the danger for the joint itself begins. The softening of the primary mass excites inflammation in the neighbouring bone-tissue, and formation of pus, which finds an exit either through the periosteum outside the joint, or else (and this is the rule) through the capsule into the joint-cavity itself. In the first case the tubercular virus contained in the pus induces a growth of miliary tubercles wherever it invades a tissue; these tubercles caseate and break down in their turn; the same process is renewed; and we get sinusses, and abscesses whose direction depends on the gravitation of their contents (*Senkungsabscesse*), as, for example, in the lumbar, iliac, and psoas abscesses which depend on tubercular caries of the vertebrae. In the second case there are two possibilities: either the bone pus enters a more or less healthy joint, or one that has its synovial membrane thickened and altered by reactive inflammation connected with the presence of the primary mass of tubercle in its vicinity. Of the two contingencies the second is the more favourable for the joint. As Volkmann puts it, "a joint reacts to inflammatory irritants of all kinds, or to infectious or poisonous matters introduced into it, the more violently the better the physiological condition of its synovial membrane. The more the latter has become vascular, thickened, infiltrated, and the more it resembles granulation tissue, the less sensitive it is to all these irritants, for the protective power of granulation tissue is well known." Hence the healthy joint invaded by tubercular pus tends to suffer purulent rather than fungous inflammation. In either case the synovial membrane undergoes infection, and miliary tubercles develop in its substance, but they only form a comparatively superficial layer in the previously healthy joint, while in a chronically inflamed joint they are scattered in groups of various sizes through the vascular granulation tissue into which the innermost layers of the synovial capsule are converted, and which have given rise to the term "fungous" with reference to this form of joint-affection.

But, whether the joint be healthy or diseased, the miliary tubercles, which are the result of the infection of its synovial membrane from the virus of the primary focus in the bone-tissue, undergo the same changes—caseation and subsequent softening—with further infection of neighbouring tissues by the products of their

decay. It is scarcely necessary to add that there is no hard and fast line between the two contingencies we have just referred to; there are all possible intermediate forms of synovial disease.

The cartilage of the joint is little attacked by the tubercular secretion in the joint-cavity. It suffers from the injury to its synovial covering, or from the invasion of granulation tissue from the underlying bone. Its detachment in whole or in part is the signal for the infection of the bony ends of the epiphysis, for the development of new tubercular layers on their ends, and their progressive destruction by the retrograde changes and infective processes already described. In a few cases the tubercular eruption in the epiphyses assumes a diffuse character, and large tracts of the medulla caseate. Here the danger of a general miliary tuberculosis throughout the body becomes considerable.

Professor Volkmann admits the existence of a "primary synovial form" of fungous joint-inflammation, but states that it is far more rare than the secondary form, is almost confined to adults, and is always due to primary tuberculosis of the synovial membrane. The cases in which it occurs are the most unfavourable of all; the inflammation of the joint assumes a marked purulent character, there is great disorganization of the articular tissues, and the patients generally die of phthisis or of tuberculosis of the bowel.

We must now pass on to say a word about the sinuses and abscesses which form in the extra-osseous tissues in connection with disease of the joints, and which we spoke of above as having a tubercular origin. Professor Volkmann points out that their character has been long overlooked, because surgeons in the pre-antiseptic days (*pace* Mr. Savory) were afraid to open them freely so as to get a view of their interior in the living subject. Now Professor Volkmann at least lays them open with free incisions under the spray, and in the extremities even, if possible, slits up the whole abscess, and makes sure that no pocket remains for the lodgment of pus; he then scrapes away the lining membrane, and the layer of soft granulation tissue under it, with the sharp spoon, until he reaches a healthy, only somewhat indurated, wall outside. Even the largest abscesses of this kind can then be obliterated by careful sutures, their walls being brought into apposition, so as to heal by first intention. The lining membrane of such an abscess in the *living* subject is of a pale grayish-yellow, or very pale violet opaque colour. Volkmann compares it to a large echinococcus cyst. It is readily detached from its bed, and on examination is found to consist almost entirely of thickly agglomerated miliary tubercles. It is peculiar, or practically so, to secondary abscesses in intermuscular and subcutaneous connective tissue, and is scarcely ever found in fungous synovial sacs. Hence, joint-cavities cannot usually be cured, like the secondary abscesses, by the use of the sharp spoon, and the total excision of the capsule is needed in the worst of such cases.

These secondary abscesses communicate by a narrow sinus with the diseased joint, or in the case of extra-articular disease with the diaphysis; and the sharp spoon at once reveals the point where the sinus enters the abscess, because *there* is always found a little granulating spot which cannot be scraped away even by using force. There the introduction of a probe will discover diseased bone.

Lastly, Professor Volkmann enunciates the axiom that "such distinct, separable lining membranes" as those he describes "are only met with as a sequela of tubercular processes."

In concluding his lecture, after pointing out how the obstinacy of these fungous joint-affections depends on continual infection and reinfection of new parts by "tubercular virus," Professor Volkmann warns his hearers not to let his revival of tubercular pathology alarm them too much, or make them too desponding about the results of treatment. He reminds them that in man this virus readily

causes local tuberculosis; but not, as in animals, except under special conditions, general tuberculosis. The lymphatic glands, except the bronchial and mesenteric glands, do not readily caseate in man; and the glands of the limbs, especially the lower, are least of all liable to these changes, whose tubercular character, in the strict sense of the word, has been put beyond a doubt by the researches of Schüppel and others. Hence it does not follow that we are, on the one hand, to doubt the "tubercular" character of the fungous joint-inflammations, because secondary lymphatic tuberculosis is, or may be, absent, nor on the other hand to lay too much stress on the "tubercular" origin of the joint-disease, following the old view of the incurability of tubercle. The patient with fungous articular inflammation may, or may not, be eventually carried off by general tuberculosis, but on the whole the chances are in his favour with rational treatment. The greatest advance that could be made in this direction, if Volkmann's interpretation of the primary caseous foci in the epiphyses of a joint is correct, would be to discover and remove these foci before the softening stage and the disorganization of the joint have commenced.

We have now sketched, and only sketched, the main outlines of Professor Volkmann's essay. To the skeptics who ask what proof there is of all he has advanced, we can best reply by recommending them to study the essay itself in detail, and, if not German scholars, at any rate, to convince themselves, by an inspection of the numerous beautiful wood-cuts and coloured lithographic plates with which it is illustrated, that his axioms are founded on something better than romance. To those who follow the progress of modern pathology attentively, there is nothing unexpected or extravagant in Professor Volkmann's discoveries; they are merely the outcome and the confirmation of the infection theory of Buhl.—*Med. Times and Gazette*, Nov. 8, 1879.

On the Treatment of Diseased Joints.

Professor VERNEUIL lately read, before the Société de Chirurgie de Paris, an important paper on the immobilization and the mobilization of diseased joints, the following abstract of which will interest our readers. He began by declaring that "a fundamental principle of therapeutics demands, as an essential condition for recovery, *rest for the diseased organ*," and that "a principle in general physiology not less fundamental affirms that *the activity of an organ* is indispensable to its material and functional preservation," and went on to observe that "from these embarrassing and contradictory propositions it follows that the rest which cures a disease may ultimately annihilate the organ; that the activity which keeps an organ alive may prevent its healing when diseased; and that rest and activity are equally useful, *even necessary*, and yet as equally injurious and dangerous."

Brought to bear on the treatment of arthropathies, the above propositions tend to render our therapeutics and practice undecided and confused. And thus some urge that as the prolonged fixation of a joint may so alter its structure as to lead to ankylosis, therefore we must limit the fixation to the shortest possible time; others maintain that rest, rigorous and persistent, is the best cure for an arthritis, therefore prolong the period of rest to the utmost extent, and disallow any attempt at movement. Bonnet, of Lyons, after having inclosed the diseased joints in immovable apparatus for a certain time, always took care, when the right moment seemed to have come, to commence passive movements, in order to restore suppleness to the joint.

This mixed practice seems, nowadays, to be almost universally adopted. Surgeons, no doubt, immobilize joints, because they have found out that it is necessary; but they are always pre-occupied by the supposed ill effects of prolonged

fixation, and eagerly look out for the moment when they may recommence the movements *which are to prevent anchylosis*. Now, Professor Verneuil said, anchylosis, in fact, is a ghost, which frightens not only the lay public, the patients, and their friends, but also nearly all general practitioners, and not a few surgeons.

"In my practice and teaching for a long time past I have combated to the uttermost this idea of anchylosis and its prevention by passive movement. Perhaps my views may seem paradoxical; nevertheless I am led on to the discussion by facts. Thus, a child with joint disease was recently brought to me. I applied absolute fixation to the joint. All the pain ceased, swelling disappeared, and recovery was taking place. At the end of some weeks I was asked when it would be necessary to remove the bandages and commence movements. To this I replied that the time was not yet come. Nevertheless, in a short time, the general practitioner, probably urged on by the friends, removed all the apparatus. As a consequence, the benefits then gained were lost, and the lesion progressed. The child was again brought; some excuses were made. I again ordered fixation, and the child is now in a fair way to recover."

The facts invoked against fixation are indeed very few, and only moderately conclusive; if the accusation is true, we ought to be surprised that the proofs are so uncommon. In order to discuss the subject with advantage, we must at least distinguish between healthy and diseased joints, and among the latter we must further establish varieties. First, then, as regards healthy joints. I affirm that there does not exist a single fact which shows conclusively that fixation, however long continued, has ever led to anchylosis. This long-continued fixation may, it is true, give rise to anatomical modifications such as diminution in the extent of the articular surfaces, to a thinning of their lining cartilage, also to a reduction in size of the synovial sacs, of a less abundant synovial secretion, and to functional changes, such as stiffness of the joints and limitation of movements. Hence, not unnaturally, when the necessity for immobilization has ceased, a certain time will be required for the complete restitution of the articular function. But there is nothing in all this which at all resembles anchylosis. It is only comparable with what takes place in mucous glands which are no longer traversed either by ingesta or by excretions; they do not become obliterated, as was taught by Bichat, but simply reduced in size. Their healthy condition, however, is again established in a few weeks, or at most in a few months, when their function is once more revived. What better example could one have than the bladder in the case of a vesico-vaginal fistula? It becomes reduced to a mere pouch, but again resumes its normal capacity as soon as the fistula is closed. I am well aware that everywhere autopsies and experiments on animals are quoted; but neither one nor another have completely convinced me. I could show that the various lesions which are revealed are not in any way of the nature to lead to anchylosis, but can be attributed to other causes rather than to the fixation. On the other hand, I might mention the numberless examples of well-known cases in which the joint, for a long time kept immovably fixed, has, notwithstanding, retained its structure and rapidly resumed its functions when permitted to do so. These latter facts are at least as numerous as the opposite ones, and, being more simple, are also more convincing. It is clear either that fixation *alone* suffices to alter a joint, and then it ought always to do so; or there is need of a peculiar predisposition and a suitably prepared soil, in which latter case it behooves us to seek whether this predisposition does not play the principal rôle. The learned professor inclines to this latter view. He admits that at the termination of any arthritis, in the treatment of which fixation more or less prolonged has been made use of, there is a diminution, a suspension, even an abolition of movement; but does not see why this

functional suppression should be attributed to fixation rather than to other causes, especially the anatomical lesions present in the joint.

Those who fear ankylosis argue that certain plastic exudations are poured out between the apposed surfaces, which, at first soft, tend to organize and so glue these surfaces together. Fixation allows this process to proceed uncontrolled. But the synovial membrane is not alone altered; the ligaments are also infiltrated and softened. This no doubt cannot be ascribed to the mere fixation, but the fixation allows the process to go on, whereas movement would certainly prevent the subsequent stiffness and shortening which otherwise come on. The cartilage may even be destroyed, and then, if fixation is carried out, the plastic matter which is deposited ossifies, and true ankylosis is effected; whereas movements would at least tend to a more or less movable joint. And moreover, the tendons are apt to get glued together within their sheaths, which is further favoured by long-continued fixation.

After passing in review the varieties of arthropathy, and the difference in their tendencies, he shows that there are some which never lead to ankylosis; while in others fixation may be carried out or not, there will be some interference with movements in any case, but not an ankylosis. Impaired movement is in all cases due to the disease, and not to the fixation.

The pain of certain arthropathies gives rise to reflex muscular fixation. If moderate, this does not lead to any ill consequences; but if excessive or prolonged, if it go on to contracture, it then becomes harmful, and by bearing unduly on circumscribed portions of the bone, or cartilages, or ligaments, it gives rise to secondary pathological changes of serious import.

In passive fixation, on the contrary, when mechanical means are used, all movements are prevented, the muscles are kept at rest, and a limb is held in its normal position.

After an examination of the various means by which immobilization is effected, he arrives at the following conclusions:—

Prolonged fixation incontestably modifies healthy joints, but not profoundly either in form or in the structure of their constituent parts, or as regards their ultimate function.

There does not exist, in scientific records, any authenticated examples of ankylosis produced in a healthy joint by mere fixation. The cases hitherto advanced in support of such an idea are capable of another interpretation. On the other hand, there are on record numerous examples of joints which have been kept immovable for long periods, and have regained their anatomical and physiological integrity.

Inflammation no doubt occupies a first place among the causes; and, as it is absolutely proved that fixation is an antiphlogistic of the first rank, it is illogical to think that it produces those effects which it is known to cure.

If, in certain cases, fixation continues to produce ankylosis, it is not that fixation which the surgeon secures by apparatus, but rather that which is due to the contracture of the peri-articular muscles. As much as the latter, which may be called *active*, favours, and indeed provokes articular disorders, by so much the former, which is *passive*, is powerful against them. There is therefore a capital distinction to make between the two varieties of fixation.

Ankylosis, on the other hand, far from being produced in articular disease, is but a rare termination to it; exceptional in strumous arthropathies, a little more frequent in rheumatic mono-synovitis, ankylosis is especially to be feared in suppurative and traumatic arthritis, though no one variety of disease is certain to produce it.

The exaggerated fear, therefore, of ankylosis has caused many practitioners to

make grave errors, and has frequently led to the too early leaving off of passive fixation, and the too premature re-commencement of movement.

Mobilization, consequent on joint disease, is of two kinds—artificial or mechanical, and natural or physiological—brought about by muscles, either voluntary or otherwise. The former, which anchylophobes use exclusively, is admissible when we have to deal with the rectification of vicious attitudes of limbs, and to treat confirmed anchyloses; but it ought to be rejected as useless, powerless, and dangerous if we would avoid ankylosis. The latter, on the contrary, is of extreme utility if applied at an opportune moment: with time it accomplishes in a remarkable degree the restoration of the articular function.

He concludes by saying that artificial fixation on the one hand, and natural fixation on the other, are the two principal therapeutic agents in arthropathies: the one combats anatomical lesions, the other restores physiological action. We may assist the former by different means—local, pharmaceutic, or hygienic; we favour the second by electrization of the peri-articular muscles, practised during the period of fixation, with a view to the prevention of degenerescence.

To combat the inflammation is the best means to prevent ankylosis. As regards surgical measures proper, I know of none better than continued extension, and, in extreme cases, preventive resection.—*Med. Times and Gazette*, Oct. 18, 1879.

Midwifery and Gynæcology.

Uterus Bicornis; Double Pregnancy.

An interesting case of this kind is reported by Dr. E. GOUTERMANN in the *Berliner Klinische Wochenschrift* for October 13th. Frau E., born in 1844, first menstruated at the age of 15, and from that time regularly, but very profusely. She was married in 1869; and in the next six years all her pregnancies, though unattended with any special disturbance, ended in abortion at the third month; the catamenia appeared regularly two or two and a half months afterwards. In September, 1875, she again became pregnant, and was delivered in the following June, after an easy labour, of a living and healthy female child. In the end of January, 1877, she had another abortion, which was followed by such profuse metrorrhagia as to demand medical aid; this had not occurred in her previous abortions. In November, 1877, she again became pregnant, the catamenia having been in the mean time very profuse, but regular in duration (four or five days). On December 30th she had another abortion, which was attended with labour-like pains, chiefly limited to the right side. In the middle of February, 1878, the catamenia returned, and appeared at intervals of twenty-eight days with remarkable intensity; on the first day, large masses of coagula, not having an offensive smell, were discharged. On examining her at the end of March—three months after the abortion—Dr. Goutermann was astonished to find indications, in the enlargement of the uterus and the movements of the fœtus, that she was five months advanced in pregnancy. After consideration, he was led to suspect that the case was one of twin-pregnancy in the uterus bicornis; that one of the embryos had continued to develop itself after and in spite of the extrusion of the other; and that it was the emptied half of the uterus which menstruated. External and internal examination tended to confirm this view, but did not render it absolutely certain. The woman being very fat, the form of the fundus uteri could not be made out by palpation; the vaginal portion was normal, and

the os was closed. Exploration with a sound was, of course, not attempted. She was ordered to rest, and to take easily digestible food. In the night of May 12th Dr. Goutermann was called to the patient. He found the left hand of the fœtus, much swollen, protruding from the genital organs; the back lay forward, and the face to the right side. There were no pains nor hemorrhage. The fœtus, a male, of about six months and a half, was easily brought into the world, but died some time afterwards. As the pains were insufficient to expel the placenta, Dr. Goutermann attempted to remove it by gentle traction and friction, with pressure over the fundus uteri, but in vain. He then proceeded to introduce his hand, following the course of the umbilical cord. In doing this he found that the os externum was formed as usual, but that the os internum, with the whole cavity of the uterus, was divided into a right and a left half by a septum. The right half, which had smooth walls and was empty, scarcely admitted the hand; in the left half the placenta was adherent over the septum. The patient made a good recovery. In August, 1879, Frau E. was delivered of a living male child, which presented in the breech-position, from the left division. On this occasion, also, there had been abortion at the second month from the right division, and subsequent menstruation.—*British Med. Journal*, Nov. 1, 1879.

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The Treatment of Uterine Tumours by Dilatation and the Ecraseur.

Dr. GEORGE H. KIDD, Master of the Coombe Lying-in Hospital, Dublin, in his address on the opening of the Section of Obstetric Medicine at the recent meeting of the British Medical Association (*British Med. Journal*, Aug. 16, 1879) made the following remarks on the treatment of uterine tumours:—

It will, perhaps, be in the recollection of some now present, that so long ago as 1868, I described (see *American Journal of the Med. Sciences*, Oct. 1868, p. 576) a peculiar method of dilating the uterus, and related a case in which I had been enabled by this means to remove a large number of intra-uterine polypi. In a paper subsequently published in the *Dublin Quarterly Journal of Medical Science* for February, 1869, I gave a diagram illustrating this method of dilatation, and showing the polypi as found in the uterus at the time of the operation. Some copies of this diagram are now on the table. It will be observed that six pieces of sea-tangle, long enough to reach from beyond the os externum to the fundus, but not to touch it, have been introduced side by side, one after another, forming a bundle of parallel pieces; and it will be seen that these, as they absorb moisture and swell, must dilate not only the os externum, but the os internum and the cavity of the uterus itself at the one operation. Thus, if the os be sufficiently large to admit the necessary number of pieces at the first sitting, the whole process may be completed in twenty-four hours. If not sufficiently large, a few pieces must be introduced in the first instance, and removed at the end of twenty-four hours, when a larger number can be used, and dilatation thus effected to any required extent. Generally, even in the nulliparous uterus, the tissues are so relaxed by hemorrhage that five or six pieces, each as large as a No. 6 catheter, can be introduced at the first sitting, and a dilatation procured sufficient for the introduction of the finger and exploration of the uterus, or the removal of small tumours. For the removal of larger tumours, however, a much greater degree of dilatation is required, and it may be necessary to introduce from twelve to eighteen pieces, which can generally be got in at the second sitting if six have been introduced at the first; but it is to be borne in mind that it is always advisable, when about to remove the tents, either for the introduction of others or for proceeding with the operation, to wash out the vagina with a solution of permanganate of potash, and after their removal to wash out the uterus itself with a similar

solution before any further steps be taken; for, though sea-tangle does not give rise to the putrid and offensive discharges found when sponge is used, yet fluids accumulate which are irritating, and may, if not removed, prove injurious both to the operator and to the patient.

We have recently had a new kind of dilating material made known to us under the name of tupelo-tents that may, at the second sitting, be advantageously used instead of sea-tangle. This substance has been brought into notice by Dr. Sussdorff, of New York. The tents are formed from the root of the *Nyssa aquatica*, which grows in the swamps of the Southern States of America. As imported into this country, they are too short to be of much use for dilating the uterus; but Messrs. Fannin and Co., of Dublin, have procured them for me of the full length required. These tents swell more quickly, and in proportion to their size when dry to a greater degree, than does the sea-tangle; but the tangle can be more easily introduced in the first instance, and, from its slower and more gradual action, will probably be found less painful and safer for the patient than the other. As soon, however, as the process of dilatation has commenced, and the tissues have become softened and relaxed, the tupelo will complete it more quickly and thoroughly than the sea-tangle. If three tupelo-tents can be introduced at the second sitting, and along with them four or five pieces of No. 6 sea-tangle, the uterus will generally be found sufficiently dilated at the end of a further twenty-four hours to permit the removal of a tumour measuring from three to four inches in diameter.

The dilatation of narrow passages dates from the earliest ages of surgery, prepared sponge being the substance generally used for the purpose; but, till suggested by Sir James Simpson about thirty years ago, the exploration of the uterus by its means had not been attempted. Till then, as Sir James has stated, intra-uterine polypi "were generally considered as placed beyond the pale of any certain means of detection, or any possible means of operative removal." But now, following in his footsteps, and using the improved methods at our disposal, large tumours, such as even Sir James Simpson would not have thought of touching, have been made accessible, and been brought within the domain of surgery. The dangers and inconveniences, however, attendant on the use of the sponge, have deterred many from attempting to dilate the uterus at all, or have led them to do it timidly and inefficiently; thus Dr. Emmett, in his recently published book, a work which would amply prove him, if we did not already know it, to be not only a bold but a most skilful and successful surgeon, though he describes a modification of the sponge-tent, and a special instrument for dilating the uterus, seems to scarcely use either for purposes of treatment, but for diagnosis only; and, indeed, specially recommends, in speaking of large tumours, that no attempt should be made for their removal till they appear at the os and begin to come down into the vagina. But we all know that, in the majority of cases, a woman's health is shattered and her life often placed in extreme jeopardy long before the tumour makes its appearance at the os, or begins to press on it. As a further example, I may mention that one of the specimens on the table was removed from the uterus of a lady who for some time was under the care of one of the most eminent gynæcologists and successful operators of the age, who, after spending a week in trying to dilate with sponge-tents, gave up the attempt, and recommended that the uterus should be extirpated, or the ovaries removed by Battey's operation; yet, after the use of two series of sea-tangles for forty-eight hours, the tumour, which was imbedded in the posterior wall of the uterus near the fundus, was safely removed by a combined process of enucleation and avulsion; an operation hazardous enough, but certainly much less so than the extirpation of either uterus or ovaries. In another case, which occurred about two years ago, the

patient had been assured by one of the leading gynæcologists in the north of England that the tumour, the nature of which he had fully recognized, could not be removed by any possible means, yet, by the means now detailed, it was, in a space of forty-eight hours, brought within reach and removed; and the lady, who had lived several years in sterile marriage, has since given birth to a child. I have not the tumour here to exhibit, for she insisted on taking it home with her to show to her friends that such tumours could be removed.

Having dilated the uterus and made the tumour accessible, the next step is to remove it. In the paper on uterine polypi already alluded to, the mode of removing a polypus with an *écraseur* is described, and illustrated by a diagram; even large tumours, if prominent into the uterine cavity, may be removed in the same way. The uterus is first drawn down to the vulva, having been seized by a strong vulsellum; then the tumour is laid hold of either with a fine vulsellum or tenaculum, or with the "spiral instrument" described and figured in his book by Dr. McClintock, which is, indeed, nothing more nor less than a long corkscrew, and the loop of a wire *écraseur* is passed round its base. In my first paper, I recommended that this should be a soft iron wire; but I now find that, for large tumours, a finely tempered steel wire is the best, such as a piano-string, as it, though it may be compressed in passing through the os, opens again by its own elasticity when it gets into the cavity of the uterus, and is, therefore, more easily passed over the tumour, and it is, besides, firmer and stronger than the iron, and will bear a greater strain. In using an *écraseur*, one of two effects will be produced. If both ends of the wire be attached to the screw, then a purely crushing movement is produced. When the screw is worked, the wire constricts the tissues till it gradually crushes its way through. If one end of the wire be attached to the screw and the other fixed, then a cutting motion is obtained combined with the crushing. This combination of cutting and crushing enables us to divide tumours that would resist and break the strongest crushing instruments; but to obtain the combined action of cutting and crushing, the screw holding the wire must travel double the distance required in the crushing movement. With the ordinary *écraseur*, consequently, it is often necessary to stop in the middle of the operation, and readjust the wire before the operation can be completed. This might, perhaps, be obviated by using Weiss's *écraseur* which has a windlass to wind up the wire, but the instrument is very cumbersome, heavy, and inconvenient, and I believe it has never come into use. A Dublin student, Dr. Denham, son of Mr. Denham, Ex-Master of the Rotunda Hospital, has, however, invented a simple instrument by which either a crushing or a combined crushing and cutting action can be obtained; and by its use, what has hitherto been one of the greatest practical difficulties in cutting through the base of large sessile tumours will probably be quite overcome. The difficulty consisted in this, that, to encircle a tumour of, let us say, from three to four inches in diameter, the loop of wire must be more than from nine to twelve inches in length, and if only one end of it be attached to the screw so as to give the combined cutting and crushing movement, the *écraseur* must be so long as to be unwieldy in its proportions and weakened in its powers. Denham obviates the difficulty by making one end of the wire traverse the whole length of the screw, and enabling us, this being accomplished, to make the other end, by a very simple movement, take up the action and follow the same course. An inspection of the instrument which lies on the table will show at a glance how this is accomplished.

What has been said so far, as to the removal of the tumours after access to them has been obtained by dilating the uterus, refers to intra-uterine tumours—that is, those which have grown into the cavity of the uterus; but interstitial tumours, or those imbedded in the substance of the uterine wall, when they approach closely

to the mucous membrane, often give rise to hemorrhage, as serious and as injurious to life and health as that caused by intra-uterine tumours. The avulsion or enucleation of such tumours has long been practised ; but, till Dr. Marion Sims and Dr. Gaillard Thomas described their mode of operating and devised instruments for the purpose, it seemed to me too dangerous to be attempted, except in extreme cases. Such tumours can now, however, be removed almost as safely as those which have grown into the uterine cavity ; but when they lie high up in the cavity of the uterus, full dilatation must first be effected, and for this purpose the method now described appears to me to be the safest and most efficient.

A series of observations on the shape of the uterus, when enlarged by the growth of a tumour in its cavity or in its walls, has induced me to suggest a few simple rules for the diagnosis of the relations and position of the tumour, which seem likely to enable us to know, before proceeding to dilate, the conditions that will probably be met with. The rules may be summed up as follows : When we have evidence of the existence of a tumour, and the cavity of the uterus is enlarged, if the uterus be uniform in shape, without any bulging out or unequal enlargement of any of its walls, the tumour will probably be found to be more or less pedunculated, growing from the fundus of the uterus and hanging down into its cavity. If the uterus be found unequal in its outline, bulged out at one side and straight at the other, and if, on introducing the sound, it pass along the convex or bulged-out side, then the tumour will be found to be growing from the wall opposite to where the bulging-out occurs, and projecting into the cavity. If this bulging-out be sudden and much marked, the tumour will probably be sessile, and projecting into the cavity from the wall opposite to the bulge, and may be so far interstitial as to have a thin layer of muscular fibre covering it over under the mucous membrane. If the uterus be bulged out in the same manner at one side, and the sound pass along the straight instead of the convex or bulged side, then the tumour will be found to be interstitial, and deeply seated in the uterine wall, closer probably to the peritoneal than the mucous surface. If further experience should confirm these rules, they will, I hope, afford us some aid towards deciding in what cases an operation should be urged, and in what it should be undertaken with more caution.

On the Treatment of Fibrous Tumours of the Uterus.

At the late International Medical Congress at Amsterdam, Dr. J. DE LA FAILLE read a paper on this subject, of which the following are the conclusions :—

1. The mode of treatment of fibroid tumours of the womb depends principally upon the flow of blood that accompanies them.
2. The seat of the tumours and their development modify the treatment.
3. Internal medication offers but little prospect of success, though it may be tried in intra-parietal fibromas. The same may be said of alkaline baths.
4. One of the most rational modes of treatment of intra-parietal fibromas is that of subcutaneous injections of ergotine.
5. The plan of dilating the womb by means of the prepared sponge or lamina, is not without danger ; it requires at least a prompt renewal of the dilating substances.
6. Linear écrasement is preferable to any other method for operating upon fibrous polyps.
7. Intra-uterine fibromas are best removed by enucleation. The same applies to sub-peritoneal fibromas.
8. In case of gastro-hysterotomy, intra-peritoneal treatment of the pedicle is preferable to extra-peritoneal treatment.

9. Total extirpation of the uterus offers some great advantages.

10. Castration is seldom indicated in cases of fibrous tumours of the womb.—*Archives Gén. de Médecine*, Nov. 1879.

Extirpation of Cancerous Uterus.

In the *Archiv für Gynäkologie*, B. xiv. H. 3, Dr. R. BRUNTZEL relates six cases of this operation performed in the hospital at Breslau.

The first case was one of polypoid sarcoma in the neck of the uterus in an unmarried girl, aged eighteen. The operation was performed on May 10, 1878, by Freund, with the assistance of Spiegelberg. Carbolic spray was not used. The intestines had to be drawn out of the peritoneal cavity. The sigmoid flexure was adherent to the uterus, and showed sarcomatous infiltration at its point of adhesion. The uterus was also adherent to the bladder. The ovaries were not removed, as they were involved in adhesions. The operation lasted two and a quarter hours. Signs of septic infection and peritonitis quickly appeared, and the patient died in fifty-three hours. A small perforation, admitting the point of a sound, was found in the sigmoid flexure.

The second case was one of carcinoma of the cervix in a woman, aged forty-seven, the mother of three children, the youngest twenty years old. For two months menstruation, previously scanty, had become very profuse, and in the intervals there was a discharge, occasionally tinged with blood. She had frequently lancinating pains in the hypogastrium and back. At her admission on June 28, 1878, the uterus was found slightly enlarged, quite freely movable, the os converted into a hard irregular ring. No induration outside the cervix could be detected.

The operation was performed on July 14th, by Spiegelberg with the assistance of Freund, Bruntzel, and others. It was found possible to keep the intestines in the upper part of the abdomen, abdominal walls being rather thin and lax. The uterine surface was roughened by lymph. Bleeding took place on separation of the right broad ligament, notwithstanding the loops of ligature, and several vessels had to be tied separately. In separating the uterus on the right side, the lowest loop of ligature was cut, and considerable arterial bleeding followed, but was arrested by ligature. In order to close more completely the wound in the peritoneum, the ovaries were stitched into its angles, the left ovary being as large as a small apple, and having some small cysts on its surface, which were previously punctured. The operation lasted two and a half hours. The patient did well after the operation, although she suffered from vomiting, and slight sup-puration occurred in the lower angle of the wound. On October 25th, however, a hard knot was felt to the left of the vaginal cicatrix, and by January 9, 1879, the cancer had recurred to such an extent that the anterior and left walls of the vagina were depressed by a number of hard, knotty swellings.

The third case was one of papillary carcinoma of the cervix, in a woman aged forty-one. She had had one child eighteen years before, and one miscarriage in the second month, about a year later. For six months menstruation had been becoming more frequent and profuse, and for two months there had been almost constant metrorrhagia, accompanied by offensive discharge. At her admission, on July 8, 1878, she was emaciated and anæmic. The cervix was converted into a large mushroom-shaped, papillary mass. The growth came quite close to, but did not absolutely reach, the vaginal insertion. The body of the uterus was movable, but there was some thickening in the position of the right ovary.

The operation was performed by Spiegelberg, on July 24th. On account of the rigidity of the abdominal muscles, it was necessary to extend the incision a

hand's breadth above the umbilicus. The uterus was found roughened by lymph. It was found necessary to draw the intestines out of the abdominal cavity. An infiltration was found in the left vaginal *cul-de-sac*, which prevented the uterus from being drawn upward, and so rendered the placing of the ligatures very difficult. Very profuse hemorrhage took place on dividing the broad ligaments, notwithstanding the ligatures, and had to be arrested by separate ligatures. The posterior wall of the bladder was wounded in separating it, but was closed by a suture. The left ovary was removed, the right was stitched into the right angle of the wound. The operation lasted two and a quarter hours. The patient never revived from the shock of the operation, and died in twenty-four hours. A small quantity of bloody fluid was found in the pelvis, the peritoneum was injected, and there was a defect in the posterior wall of the bladder, opening into the vagina.

The fourth case was one of papillary carcinoma of the anterior lip of the cervix, in a woman aged fifty-one. She had had one child thirty years before, and an abortion in the second month, eight years before. Since Christmas, 1877, she had suffered from pains in the hypogastrium and back, and discharge. Hemorrhage recurred almost every fortnight. The vagina was filled by a cauliflower-like growth from the anterior lip of the os, but there was a free zone of mucous membrane separating it from the vaginal insertion. On June 10th, the growth was removed by *écraseur*, and no sign of malignant growth could be discovered by the naked eye or microscope in the cut surface. On August 1st, the patient returned, a sanguineous semi-purulent discharge having recurred for some days. Recurrence of the growth was found on the posterior border of the stump, infiltration reaching the cervical canal. Thickening was felt in Douglas's fossa, and a knotty induration in the right *cul-de-sac*. An exploratory abdominal incision was made on August 5th, by Spiegelberg, with the assistance of Freund, Bruntzel, and others, but extensions of cancer being found around the uterus, no attempt was made to extirpate it. Little disturbance followed the operation.

The fifth case was one of carcinoma of the cervix, in a woman, aged forty-one, the mother of six children. She had suffered for six months almost continual metrorrhagia, accompanied by pain in the hypogastrium, but was not emaciated, although anæmic. The uterus was enlarged, reaching two finger-breadths above the pubes. The cervix was short, with an old laceration on the right side, and in this situation were prominent carcinomatous masses. The outer part of cervix and the vagina were free, except a small indurated spot in the vaginal vault. The operation was performed by Spiegelberg, on October 25, 1878. One large coil of jejunum had to be drawn out of the abdomen. After separation of the uterus from the bladder, as the operator was attempting to draw up the cervix by the fingers passed down through the aperture, the body of the uterus broke off from the cervix, about the situation of the internal os. At this time sudden collapse came on, the pulse could no longer be felt, and it became necessary to remove the chloroform and inject ether. The cervix was hastily excised, and it then appeared that cancerous infiltration extended to a considerable distance on the right side of the cervix. The ovaries, which were unaltered, were removed, and the pedicles tied. The operation lasted two and a quarter hours. The patient never revived from the collapse, and died thirteen hours after the operation. At the autopsy, emphysema of the lungs and fatty degeneration of the heart were found. The deep inguinal glands in the right side were all enlarged by carcinomatous deposit.

The sixth case was one of carcinoma of the cervix, in a woman, aged forty. She had had four children, and one abortion, the last delivery being in February, 1874. For three months she had suffered from constant metrorrhagia; she was

much emaciated, and suffered severe pain. The anterior lip of the cervix and the cervical canal were infiltrated with cancer, the vagina free. The operation was performed by Spiegelberg on November 28, 1878. A great portion of the intestines had to be drawn out of the abdomen. The uterus was fixed backwards by adhesions, but could be drawn up after their separation. The ovaries were removed and the pedicles tied. The lowest loops of ligatures were passed, not by Freund's needle, but by the method proposed by Kochs, after previous separation of the uterus anteriorly and posteriorly. Profuse bleeding took place on separation of the broad ligaments, and many arterial branches had to be tied. A piece of cancerous tissue, which remained attached in the anterior vaginal *cul-de-sac*, was afterwards tied and separated. The operation lasted two hours. From the time of the operation there was complete suppression of urine. The patient, however, lived four and a half days, and there was no trace either of uræmic symptoms or of œdema. Both ureters were found to be included in the loops of ligature. The ureters above and the pelves of the kidneys were dilated, the kidneys showed recent inflammation, there was hyperæmia and œdema of the lungs, and the peritoneal cavity contained offensive purulent fluid.

The carbolic spray was not used at any of the operations, for fear that it might increase the shock necessarily incurred in an operation of such long duration. The author considers that the occurrence of the accident of tying the ureters, in the last operation, is a fatal objection to Kochs's method of passing the lowest loop of ligature. He proposes, however, in future, since the ligatures *en masse* prove insecure against bleeding, to cut the base of the broad ligaments gradually from above, after placing the two upper loops, and secure each vessel as it is divided. In conclusion, the author is of opinion that Freund's operation can only prove palliative, and not curative, and that its legitimate application will be confined to quite exceptional cases.

Another fatal case of extirpation of the cancerous uterus is reported by Dr. Fritsch (*Centralbl. für Gynäkologie*, 1869, No. 17). The patient was a nullipara, aged 62. The menopause had occurred at the age of 41. A year previously the patient had sought for relief on account of a sanguineous discharge. The author found a soft papillary mass, readily bleeding, but only as large as a pea, on the anterior lip of the cervix. On account of its suspicious character, he slit up the cervix bilaterally, and amputated the anterior lip. The microscope showed the presence of cancer, and that, at the upper angle of the excised portion, the section passed through mucous membrane, which had undergone carcinomatous degeneration. The patient, considering herself well after this operation, went away, and the author could not get the opportunity of seeing her again. Only after an interval of nine months did sanguineous discharge recommence, and she then reappeared. The author then found a nodular and friable mass of carcinoma projecting from the os, and surrounding it on every side. The outer portion of the vaginal portion was entirely free, the uterus freely movable, and the cellular tissue round it unaffected.

The operation was performed on July 15th. It proved necessary to draw the intestines outside the abdomen, as might be expected in a nullipara. To cover them, a large sheet of carbolic gauze, dipped in warm 2 per cent. carbolic solution was used. Two loops of ligature were placed on the broad ligament at each side, the first loop being carried as low as possible, and the second entering the vagina. The right ovary was removed; the left, which was firmly adherent to a coil of intestine, was left. After removal of the uterus, the author departed from the method of Freund, objecting to the long time occupied in placing the peritoneal sutures. Instead of using these, he turned the patient with her feet towards the light, and, introducing a Sims's speculum, sewed up the vagina from

left to right, as recommended by Credé. He failed, however, to produce an inversion of the vagina. He now regrets greatly that he did not adopt Freund's method in full, believing that the suture of the vagina interferes with the necessary drainage. On the 28th, the patient was attacked by vomiting and other symptoms resembling ileus. On the 29th, the abdominal wound was opened without finding any source of obstruction, and the patient died about five hours later. At the autopsy no absolute obstruction was found, but an angular bend, which the author considers was the cause of ileus. In conclusion, the author expresses the opinion that it will be impossible to keep up a perfect antiseptis in the vagina, except by the method of continual irrigation. In future cases he intends to carry this out for the first three or four days by means of a tube passed up to the vaginal wound.—*Obstetrical Journal of Great Britain*, Oct. 1879.

Gastrotomy performed Three Times on the same Patient within Three Years.

Dr. BAUMGARTNER, of Baden-Baden, states (*Berliner Klin. Wochenschrift*, No. 5) the following case: A woman, 33 years old, had a polycystic tumour of the left ovary, which was removed by ovariectomy in September, 1875. The operation was performed without antiseptic precautions, except that the peritoneal cavity was washed out after the operation with several litres of warm water. The pedicle was treated by a clamp, and drainage, through the pouch of Douglas, was employed. The patient recovered, and was about, with the wound completely healed, by the thirty-fourth day.

She remained well until December, 1876, when, after a strain, she was attacked by violent pain in the cicatrix. This gradually increased until it became so severe that she was unable to turn in her bed, and even micturition became excessively painful. An examination revealed no possible cause for the pain except tension of the pedicle and its adhesions to surrounding organs. Gastrotomy was therefore performed in March, 1877, as the symptoms showed no remission. The pedicle was found to be adherent to the posterior wall of the bladder, the omentum, and some coils of intestine. These adhesions were separated, the pedicle was dropped, and the adherent portions of omentum were stitched into the abdominal wound. The patient recovered after several weeks.

In January, 1878, violent pain returned in the right ovarian region, which increased at each period, and at length became unendurable. The uterus was found to be normal. The right ovary was somewhat swollen and fixed. Near it was felt a swelling about as thick as a thumb, extending from the right ovary towards the centre and somewhat to the left, and itself also fixed. Febrile symptoms set in after this, and the patient's condition became visibly and progressively deteriorated.

Gastrotomy was therefore performed for the third time on August 19, 1878. The right Fallopian tube was found to be distended by purulent salpingitis, and was removed together with the ovary. The substance of the ovary itself was normal. The pavilion of the tube was adherent to the ovary, and formed with it a funnel-shaped sac, which was filled with thick, cheesy pus, and had walls so thin in places that rupture might have occurred at any moment. The patient recovered, and left her bed on the 16th May, completely cured.—*Obstetrical Journal of Great Britain*, Nov. 1879.

Wound of the Bladder in Ovariectomy.

In a recent number of the *Journal des Sciences Médicales de Lille*, Dr. G. EUSTACHE describes a case where this grave complication occurred during operation, without being followed by fatal results, although the ovarian cyst was

suppurating and universally adherent. The patient was a single lady, aged 43, who had noticed a gradual increase in the size of her abdomen for six years, commencing in an attack of severe pain in the right iliac region. The abdomen at length became very large, and frequent attacks of pain and feverishness, dyspnoea, tenesmus, and oedema of the lower extremities supervened. The urine was also highly albuminous. She was tapped; but the peritoneal cavity soon filled again, so that ovariectomy was performed on May 14th. All instruments, sponges, and towels used for the operation were previously soaked in a five per cent. solution of carbolic acid; and the spray was employed. In making the abdominal incision the bladder was wounded; urine, taken at the time for ascitic fluid, escaping from the lower extremity of the wound, which was about five inches above the symphysis. The cyst was tapped and detached from its adhesions with considerable difficulty; the spray was then discontinued—for what reason we are not informed. The pedicle was secured by a stout wire twisted around it, and a silk ligature was tied very tightly below it; then the tumour, a multilocular cyst of the right ovary, was cut away. Two catgut ligatures were applied to the omentum. After the peritoneal cavity was sponged out, the bladder was found to have been wounded by an incision nearly an inch long below the anterior peritoneal reflexion. The wound was sewn up by three catgut sutures passed through all the coats of the bladder, including the mucous membrane; the ends of the threads were cut short. On beginning the closure of the abdominal walls the spray was again employed. The intestines had previously been protected by small pieces of flannel soaked in a solution of carbolic acid. The ends of the ligatures of the wounded omentum were brought out through the upper part of the incision; the pedicle was brought into apposition with the lower; the wire was removed; and, to prevent retraction, a pin was passed through the pedicle and the integument on each side of it. A drainage-tube was placed above the pedicle, and a second below it. On the second day urine was passed freely and without pain. On the sixth day the omental ligatures came away; black, sanious, stinking discharge escaped from the drainage-tube. On the ninth day the pin was removed from the pedicle, which was sloughy. The drainage-tubes were removed on May 27th, and the pedicle came away on the sixteenth day. After an attack of bronchitis, the patient recovered completely, with no difficulty in performing micturition. The urine had been quite clear from the first. The successful issue of this case is highly satisfactory, considering the serious nature of the injury and the other complications. Some of the details of the treatment would have been arranged otherwise by English operators of the present period; but, from the paper itself, it is clear that great precautions were carried out by the operator in the after-treatment.—*British Med. Journal*, Nov. 1, 1879.

Medical Jurisprudence and Toxicology.

Acute Poisoning by Ergot followed by Tolerance of the Drug.

Dr. MEADOWS records (*Med. Times and Gazette*, Oct. 4, 1879) the following case of poisoning by ergot which was treated at St. Mary's Hospital, London:—

Mrs. W., aged forty-eight, a stout, healthy-looking woman, was admitted on October 21, 1878. She had been married twice, first at the age of seventeen,

afterwards at the age of forty. She had two children by the first marriage, but none subsequently, and her last pregnancy was twenty years ago.

Eight years before admission here she was under the treatment of Dr. Meadows, at Soho Hospital, for fibroid tumour of the uterus. During that time she took ergot twice. The first time it affected her severely; but on the second administration it failed to act on the uterus at all. She was in Soho Hospital at that time for three months, and left cured. In March, 1878, she came to St. Mary's suffering from menorrhagia, and was examined by Dr. Meadows, who detected a growth in the uterus. She was subsequently admitted in October; and on the 23d of that month, patient being under the influence of chloroform, a fibro-cystic polypus was removed from the anterior wall of the uterus.

On October 31, pulv. ergotæ 3ss was ordered, with the view of bringing down any shreds of growth which might remain. The effects of this drug were very marked, as in ten minutes powerful uterine contractions were set up, and continued for two hours, when on vaginal examination a large tumour of the size of an orange was found presenting. In addition to the very strong uterine action there was marked depression, and she complained of severe nausea and headache. The face was deeply flushed, and the eyelids were swollen, the right one especially. The left arm and hand were greatly increased in size—so much so, that a ring she wore on her finger was completely hidden. The pulse, usually rather weak, was scarcely perceptible at the wrist, the artery being quite soft. The rate of the heart's action was not much influenced, but was slightly hurried. The swelling of the arm and hand did not disappear until next day, when she was in all respects well. Dr. Meadows removed the tumour (which was attached to the fundus by a narrow pedicle) by means of the *écraseur*.

November 7. Ergot was given again, as it was found that another tumour was present. As one dose did not act at first, it was repeated in six hours, and the symptoms already noted appeared again, but in an exaggerated form. The pain was so intense that she was ordered a hypodermic injection of one-fourth of a grain of morphia, with the result of easing pain and checking uterine action. The tumour presented, but as operation was not then convenient it was not removed, and gradually receded.

On November 24 ergot was again given; but three half-drachm doses administered at intervals of six hours produced no effect beyond the swelling of the face and arms, depression, and nausea. Patient was then unsuccessfully galvanized with the view of stimulating the uterus to contract and expel the growth.

In this case there is a history of ergot having been given at five different times, twice at Soho Hospital, and three times at St. Mary's. Each time it has given rise to the peculiar symptom of the swelling of the face and left arm and hand. In three out of the five times given it has produced powerful uterine action; on the third occasion on which it was given, here, and on the second, at Soho, it had no action on the uterus at all. This in itself is peculiar, and seems to point to a tolerance of the drug being established as far as the uterine fibres were concerned; probably the fact that galvanism also failed to excite contractions would show that the excitability of the uterus was much impaired. It may be noted that this patient suffered from a weak and dilated heart, and that there was a mitral systolic murmur to be heard.

Another case of ergot poisoning with similar symptoms occurred once before at St. Mary's, but in that instance the action of the drug appeared to have been cumulative, as large doses had been given daily for about three weeks, at the end of which time swelling of the face and arms, with intense depression and vomiting of dark fluid, had occurred.

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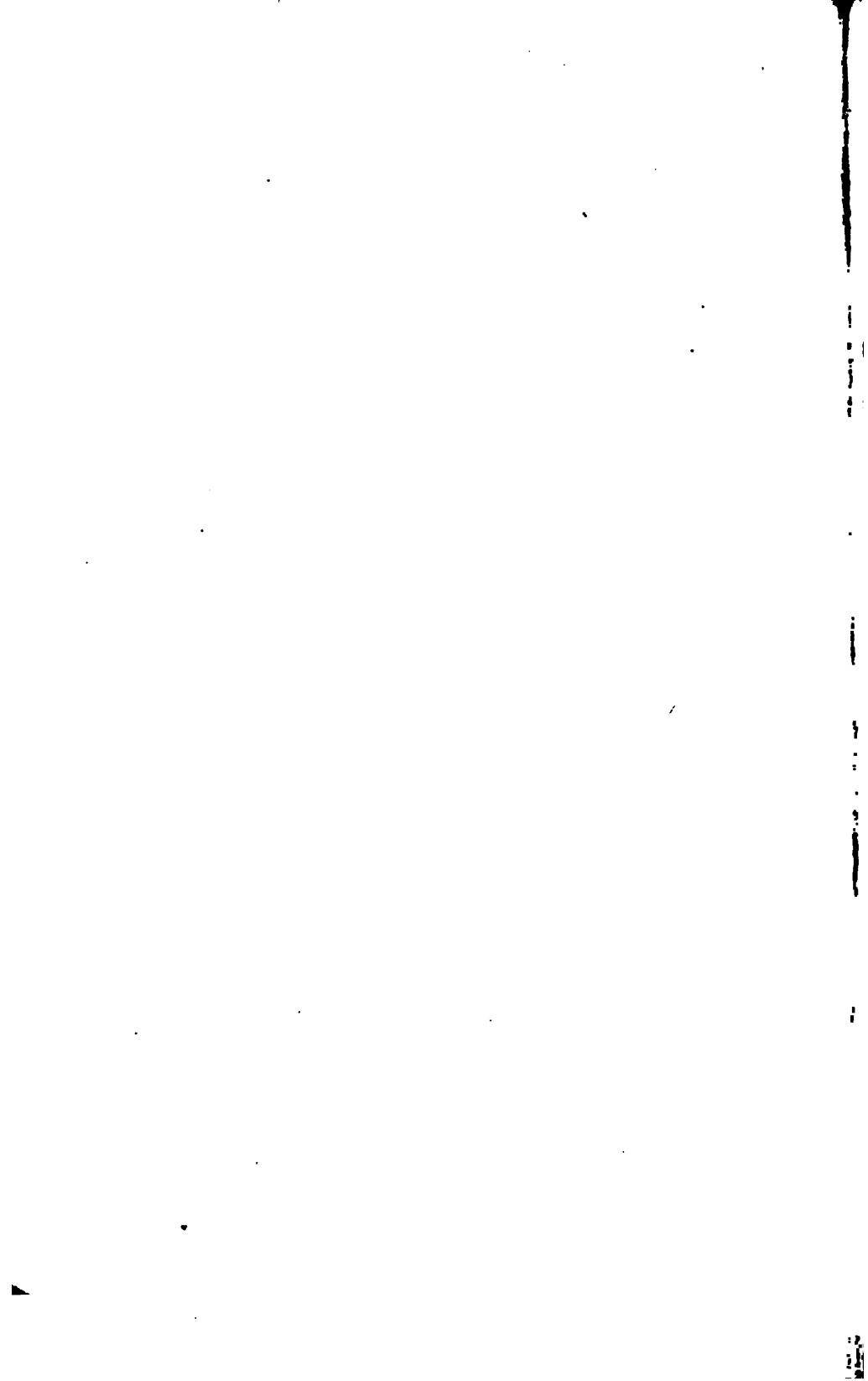
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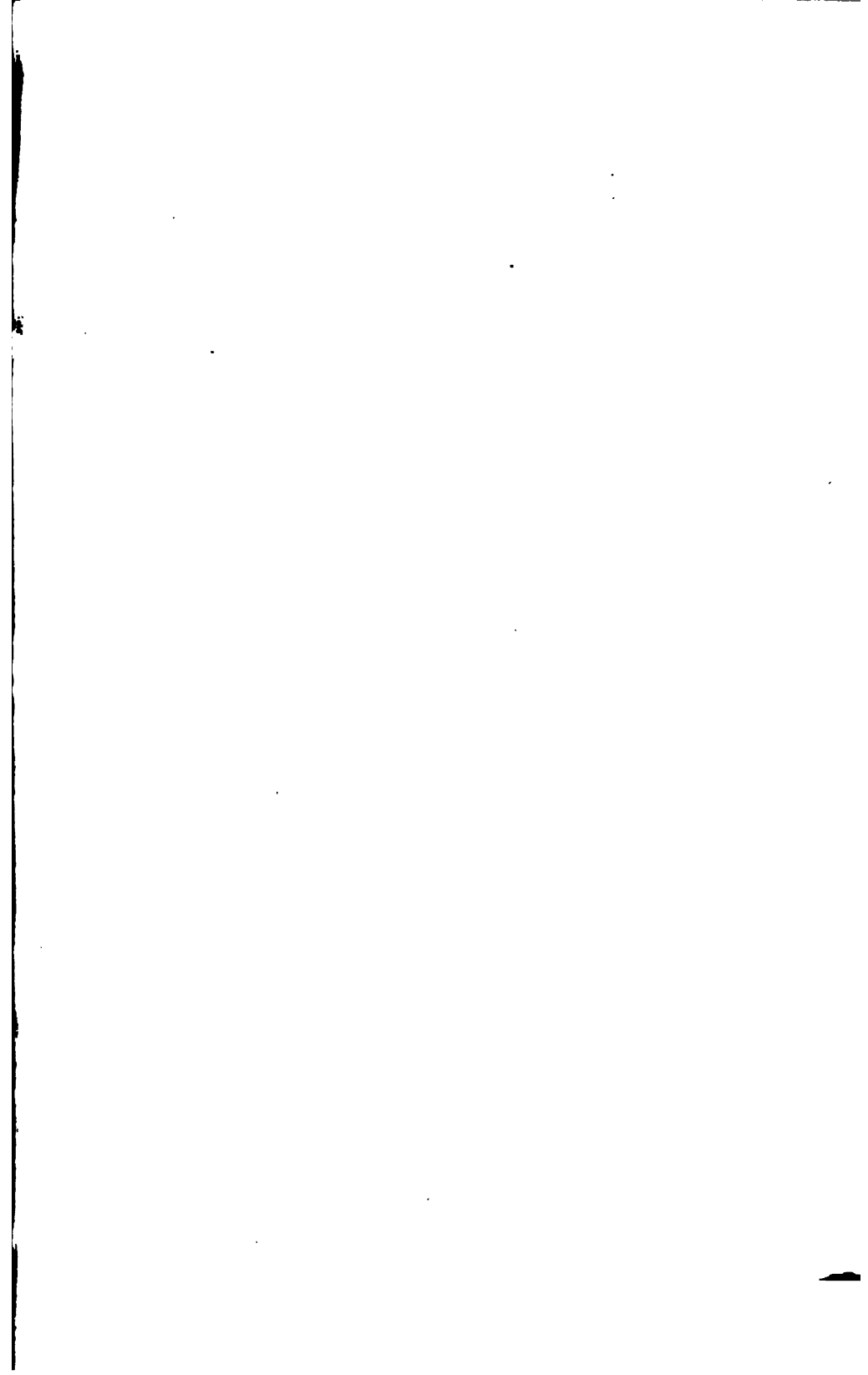
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